Contact SAMSUNG WORLDWIDE
If you have any questions or comments relating to Samsung products, please contact the SAMSUNG customer care centre.

Country	Customer Care Centre ☎	Web Site
AUSTRALIA	1300 362 603	www.samsung.com/au
CHINA	800-810-5858 400-810-5858 010-6475 1880	www.samsung.com/cn
	HONG KONG:3698 - 4698	www.samsung.com/hk
INDIA	3030 8282 1-800-3000-8282 1800 110011	www.samsung.com/in
INDONESIA	0800-112-8888	www.samsung.com/id
JAPAN	0120-327-527	www.samsung.com/jp
MALAYSIA	1800-88-9999	www.samsung.com/my
NEW ZEALAND	0800 SAMSUNG (0800 726 786)	www.samsung.com/nz
PHILIPPINES	1-800-10-SAMSUNG(726-7864) 1-800-3-SAMSUNG(726-7864) 02-5805777	www.samsung.com/ph
SINGAPORE	1800-SAMSUNG(726-7864)	www.samsung.com/sg
THAILAND	1800-29-3232 02-689-3232	www.samsung.com/th
TAIWAN	0800-329-999	www.samsung.com/tw
VIETNAM	1 800 588 889	www.samsung.com/vn
SOUTH AFRICA	0860-SAMSUNG(726-7864)	www.samsung.com/za
U.A.E	800-SAMSUNG (726-7864) 8000-4726	www.samsung.com/ae

BN68-02112A-00

SERIES 7

LED TV
user manual

imagine the possibilities

Thank you for purchasing this Samsung product.
To receive more complete service, please register your product at

www.samsung.com/register

Model _____ Serial No. _____

❑ License

Without producing harmful VOC (Volatile Organic Compounds), Samsung's Eco-friendly "Crystal Design" expresses colour gradation thanks to our dual injection technology.

TruSurround HD, SRS and (●) symbol are trademarks of SRS Labs, Inc. **TruSurround HD** technology is incorporated under license from SRS Labs, Inc.

Manufactured under license from Dolby Laboratories. Dolby and the double-D symbol are trademarks of Dolby Laboratories.

DivX Certified products using Home Theatre Test Kit v3.0 or later: Plays DivX® video, including premium content.

❑ Precautions When Displaying a Still Image

A still image may cause permanent damage to the TV screen

- Do not display still image and partially still on the LED panel for more than 2 hours as it can cause screen image retention. This image retention is also known as "screen burn". To avoid such image retention, reduce the degree of brightness and contrast of the screen when displaying a still image.
- Watching the LED TV in 4:3 format for a long period of time may leave traces of borders displayed on the left, right and centre of the screen caused by the difference of light emission on the screen. Playing a DVD or a game console may cause a similar effect to the screen. Damages caused by the above effect are not covered by the Warranty.
- Displaying still images from Video games and PC for longer than a certain period of time may produce partial after-images. To prevent this effect, reduce the 'brightness' and 'contrast' when displaying still images.

© 2009 Samsung Electronics Co., Ltd. All rights reserved.

CONTENTS

CONNECTING AND PREPARING YOUR TV

- Viewing the Control Panel 2
- Accessories 3
- Viewing the Connection Panel 4
- Viewing the Remote Control 6
- Mini Remote Control 7
- Installing Batteries in the Remote Control 7

OPERATION

- Viewing the menus 8
- Plug & Play Feature 9

CHANNEL CONTROL

- Configuring the Channel Menu 9
- Managing Channels 12

PICTURE CONTROL

- Configuring the Picture Menu 14
- Viewing Picture-in-Picture 17
- Using Your TV as a Computer (PC) Display 17
- Setting up the TV with your PC 18

SOUND CONTROL

- Configuring the Sound Menu 19
- Selecting the Sound Mode 20

SETUP

- Configuring the Setup Menu 21
- Network Connection 24
- Setting the Network 27

INPUT / SUPPORT

- Configuring the Input Menu 30
- Configuring the Support Menu 30

MEDIA PLAY (USB & DLNA)

- Connecting a USB Device 32
- Media Play Function 33
- Sorting the Photo List 34
- Photo List Option Menu 35
- Viewing a Photo or Slide Show 36
- Slide Show Option Menu 37
- Sorting the Music List 38
- Music List Option Menu 38
- Playing a Music 39
- Music Play option Menu 40
- Sorting the Movie List 40
- Movie List Option Menu 41
- Playing a Movie File 42
- Movie Play Option Menu 43
- Using the Setup Menu 44

MEDIA PLAY-DLNA

- Setting the DLNA Network 45
- Installing the DLNA Application 45
- Using the DLNA Application 46
- Using the DLNA Function 49

ANYNET+

- Connecting Anynet+ Devices 50
- Setting Up Anynet+ 51
- Switching between Anynet+ Devices 51
- Recording 52
- Listening through a Receiver (Home theatre) 53
- Troubleshooting for Anynet+ 53

CONTENT LIBRARY

- Using the Content Library 54
- Using the TV Memory Contents 54
- Using the Content Management 55

INTERNET@TV

- Getting Started with Internet@TV 56
- Setting up Internet@TV 56
- Using the Internet@TV service 57
- Troubleshooting for internet@TV 58
- Help Website 58

HOME NETWORK CENTRE

- Home Network Centre 59
- Setting Up the Home Network Centre 60
- Using the Message Function 61
- Using the Media Function 62

RECOMMENDATIONS

- Teletext Feature 63
- Installing the Stand 64
- Disconnecting the Stand 64
- Installing the Wall Mount Kit 64
- Anti-Theft Kensington Lock 65
- Assembling the Cables 65
- Preparing before installing Wall-Mount 66
- Securing the Installation Space 66
- Securing the TV to the Wall 67
- Troubleshooting: Before Contacting Service Personnel 68
- Specifications 69

❑ **Symbol**

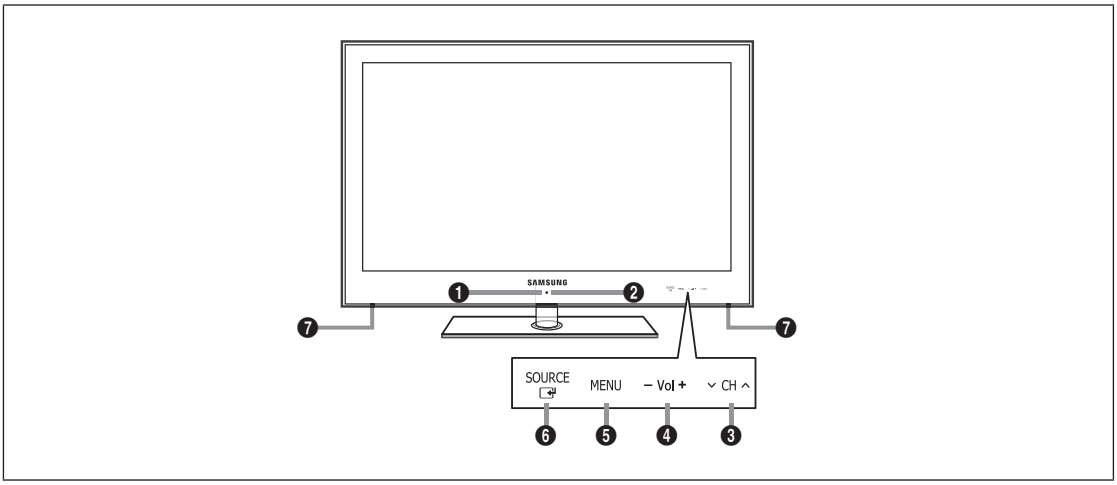
Note	One-Touch Button	TOOL Button	Press

CONNECTING AND PREPARING YOUR TV

Figures and illustrations in this User Manual are provided for reference only and may differ from actual product appearance. Product design and specifications may be changed without notice in order to enhance product performance.

Viewing the Control Panel

The product colour and shape may vary depending on the model.
The front panel buttons can be activated by touching them with your finger.



❶ **REMOTE CONTROL SENSOR**
Aim the remote control towards this spot on the TV.

❷ **(POWER)**
Press to turn the TV on and off.

❸ **CH**
Press to change channels. In the on-screen menu, use the **CH** buttons as you would use the ▼ and ▲ buttons on the remote control.

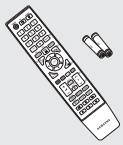
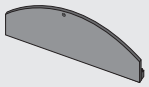
❹ **– VOL +**
Press to increase or decrease the volume.
In the on-screen menu, use the **– VOL +** buttons as you would use the ◄ and ► buttons on the remote control.

❺ **MENU**
Press to see an on-screen menu of your TV's features.

❻ **SOURCE**
Toggles between all the available input sources. In the on-screen menu, use this button as you would use the **ENTER** button on the remote control.

❼ **SPEAKERS**

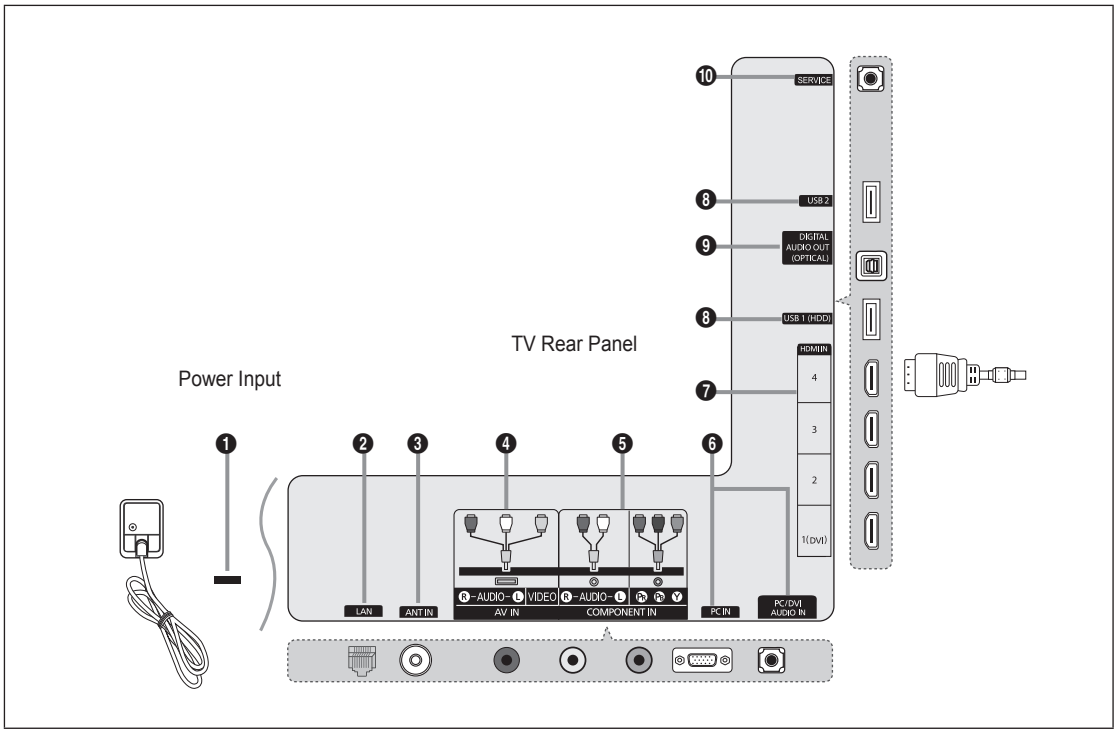
Accessories

			
Remote Control & Batteries (AAA x 2)	Mini Remote Control & Batteries (3V)	Programme CD	Cover-Bottom
Holder-Wire Cable (Depending on the model)	Holder-Wire (3ea)	Stand Screw (M4 X L10) (Depending on the model)	
AV Cable	Sound Cable	Component Cable	
Holder-Ring (4ea)	Holder-Wire Stand	Cleaning Cloth	

- Owner's Instructions
- Warranty card
- Safety Guide
- Registration Cards

Please make sure the following items are included with your LED TV. If any items are missing, contact your dealer.
Warranty card / Safety Guide / Registration Cards (Not available in all locations)
The items colour and shape may vary depending on the model.

Viewing the Connection Panel



- The product colour and shape may vary depending on the model.
- Whenever you connect an external device to your TV, make sure that power on the unit is turned off.
- When connecting an external device, match the colour of the connection terminal to the cable.

1 KENSINGTON LOCK (depending on the model)
- The Kensington Lock (optional) is a device used to physically fix the system when used in a public place.
- If you want to use a locking device, contact the dealer where you purchased the TV.
- The location of the Kensington Lock may be different depending on its model.

2 LAN
- Connect a LAN cable to this port to connect to the Network.

3 ANT IN
- To view television channels correctly, a signal must be received by the set from one of the following sources: An outdoor aerial / A cable television network

4 AV IN [R-AUDIO-L] / [VIDEO]
- Connect RCA cable to an appropriate external A/V device such as VCR, DVD or Camcorder.
- Connect RCA audio cables to **[R-AUDIO-L]** on your set and the other ends to corresponding audio out connectors on the A/V device.

5 COMPONENT IN
- Connect component video cables (optional) to component connector (P_R, P_B, Y) on the rear of your set and the other ends to corresponding component video out connectors on the DVD.
- If you wish to connect both the Set-Top Box and DVD, you should connect the Set-Top Box to the DVD and connect the DVD to component connector (P_R, P_B, Y) on your set.
- The P_R, P_B and Y connectors on your component devices DVD are sometimes labeled Y, B-Y and R-Y or Y, Cb and Cr.
- Connect RCA audio cables (optional) to **[R-AUDIO-L]** on the rear of your set and the other ends to corresponding audio out connectors on the DVD.

6 PC IN / PC/DVI AUDIO IN
- Connects to the video and audio output jacks on your PC.
  - If your PC supports an HDMI connection, you can connect this to the **HDMI IN 1(DVI), 2, 3** or **4** terminal.
  - If your PC supports a DVI connection, you can connect this to the **HDMI IN 1(DVI) / PC/DVI AUDIO IN** terminal.

❼ **HDMI IN 1(DVI), HDMI IN 2, HDMI IN 3, HDMI IN 4**

– Supports connections between HDMI-connection-enabled AV devices (Set-Top Boxes, DVD players)
– No additional Audio connection is needed for an HDMI to HDMI connection.
– When using an HDMI / DVI cable connection, you must use the **HDMI IN 1(DVI)** jack.

What is HDMI?

'High Definition Multimedia interface' allows the transmission of high definition digital video data and multiple channels of digital audio.

The HDMI / DVI terminal supports DVI connection to an extended device with the appropriate cable (not supplied).

The difference between HDMI and DVI is that the HDMI device is smaller in size, has the HDCP (High Bandwidth Digital Copy Protection) coding feature installed, and supports multi - channel digital audio.

The TV may not output sound and pictures may be displayed with abnormal colour when DVD / Blu-ray player / Cable Boxes / Satellite receivers supporting HDMI versions older than 1.3 are connected. When connecting an older HDMI cable and there is no sound, connect the HDMI cable to the **HDMI IN 1(DVI)** jack and the audio cables to the **DVI AUDIO IN** jacks on the back of the TV. If this happens, contact the company that provided the DVD / Blu-ray player / Cable Box / Satellite receiver to confirm the HDMI version, then request a firmware update. HDMI cables that are not 1.3 may cause annoying flicker or no screen display.

Supported modes for HDMI / DVI and Component.

	480i	480p	576i	576p	720p	1080i	1080p
HDMI / DVI 50Hz	X	X	X	O	O	O	O
HDMI / DVI 60Hz	X	O	O	X	O	O	O
Component	O	O	O	O	O	O	O

❽ **USB1(HDD)** / **USB2**

– Connector for software upgrades and Media Play, etc.
– You can connect to Samsung's network wirelessly using the 'Samsung Wireless LAN Adapter' (Sold separately).

For USB HDD, use the USB1 (HDD) port.

❾ **DIGITAL AUDIO OUT (OPTICAL)**

– Connects to a Digital Audio component.

When a Digital Audio System is connected to the **DIGITAL AUDIO OUT (OPTICAL)** jack: Decrease the volume of the TV and adjust the volume level with the system's volume control.

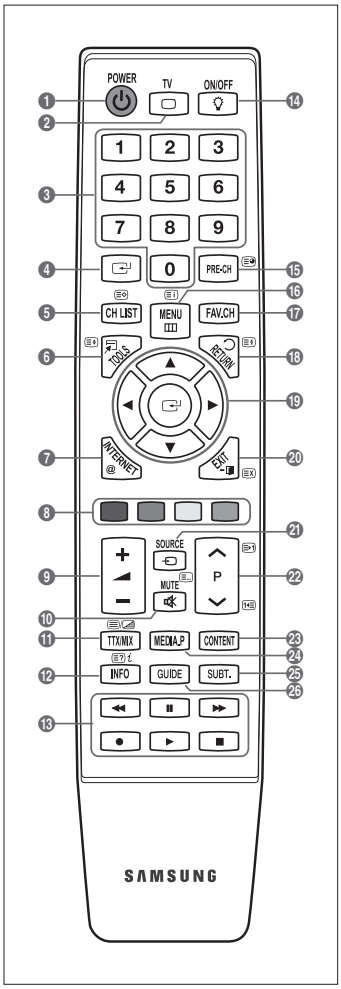
5.1CH audio is possible when the TV is connected to an external device supporting 5.1CH.

❿ **SERVICE**

– Connector for service only.

Viewing the Remote Control

- You can use the remote control up to a distance of about 23 feet from the TV.
- The performance of the remote control may be affected by bright light.
- The product colour and shape may vary depending on the model.



❶ **POWER** : Turns the TV on and off.

❷ **TV** : Selects the TV mode directly.

❸ **NUMERIC BUTTONS** : Press to change the channel.

❹ ⏎ : Performs the same function as the **ENTER** ⏎ button of the directional buttons. When switching channels with the numeric buttons, and you press the channel number and then the **ENTER** ⏎ button, the channel is immediately switched.

❺ **CH LIST** : Displays the Channel List on screen.

❻ **TOOLS** : Use to quickly select frequently used functions.

❼ **INTERNET@** : Press to use various internet services to view useful information and entertaining content. (Australia, Singapore only)

❽ **COLOUR BUTTONS** : Use these buttons in the **Channel list**, **Internet@TV**, **Media Play** menu, etc.

❾ **–** ◢ **+** : Press to increase or decrease the volume.

❿ **MUTE** 🔇 : Press to temporarily cut off the sound.

⓬ **INFO** : Press to display information on the TV screen.

⓭ Use these buttons in the DMA, **Media Play** and **Anynet+** modes. (●: This remote can be used to control recording on Samsung recorders with the Anynet+ feature)

⓮ **ON/OFF** ⏻ : Pressing the **ON/OFF** ⏻ light button toggles between on and off. When the remote control is on, and a button is pressed on the remote control, the remote control buttons will be lit for a moment. (Using the remote control with the **ON/OFF** ⏻ light button set to On will reduce the battery usage time.)

⓯ **PRE-CH** : Enables you to return to the previous channel you were watching.

⓰ **MENU** : Displays the main on-screen menu.

⓱ **FAV.CH** : Used to display Favourites Channel Lists on the screen.

⓲ **RETURN** : Returns to the previous menu

⓳ **UP▲ / DOWN▼ / LEFT◄ / RIGHT► / ENTER** ⏎ : Use to select on-screen menu items and change menu values.

⓴ **EXIT** : Press to exit the menu.

㉑ **SOURCE** : Press to display and select the available video sources.

㉒ ∨ **P** ∧ : Press to change channels.

㉓ **CONTENT** : This function enables you to view the **Content Library**.

㉔ **MEDIA.P** : Allows you to play music files, pictures and movies.

㉕ **SUBT.**: Digital subtitle display

㉖ **GUIDE**: Electronic Programme Guide (EPG) display. (Australia, Singapore only)

Teletext Functions

❷ ▭ : Exit from the Teletext display

❺ : Teletext store

❻ : Teletext size selection

❽ Fastext topic selection

⓫ /◢ : Alternately select Teletext, Double, or Mix.

⓬ : Teletext reveal

⓯ : Teletext sub page

⓰ : Teletext index

⓲ : Teletext hold

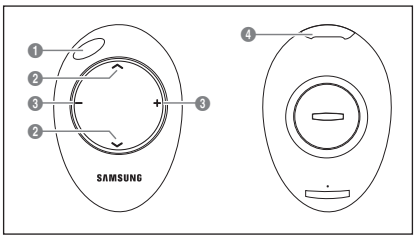
⓴ : Teletext cancel

㉑ : Teletext mode selection (LIST / FLOF)

㉒ : Teletext next page
: Teletext previous page

Mini Remote Control

The Mini Remote Control is a simplified remote control that consists of the power, channel and volume buttons only.



❶ Television Standby button

✎ This button only works when you press it for longer than 1.5 seconds.

❷ ∧ : Next channel / ∨ : Previous channel

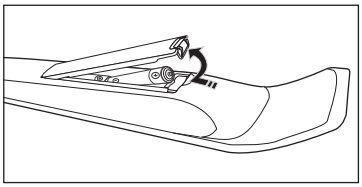
❸ **+** : Next channel / **–** : Previous channel

❹ IrDA transmitter

✎ Use the Mini Remote Control so that this part faces the TV.

Installing Batteries in the Remote Control

Normal Remote Control



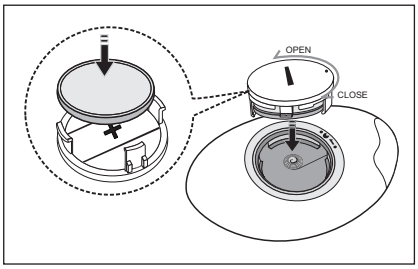
1. Lift the cover at the back of the remote control upward as shown in the figure.
2. Install two AAA size batteries.

✎ Make sure to match the '+' and '–' ends of the batteries with the diagram inside the compartment.

3. Replace the cover.

✎ Remove the batteries and store them in a cool, dry place if you won't be using the remote control for a long time. (Assuming typical TV usage, the batteries should last for about one year.)

Mini Remote Control



1. Turn the battery cover counterclockwise to unlock it and then separate the battery cover.
2. Insert the corresponding 3V Lithium battery.
3. Place the battery cover into the remote control aligning it with the grooves and then turn the battery cover clockwise to lock the cover.

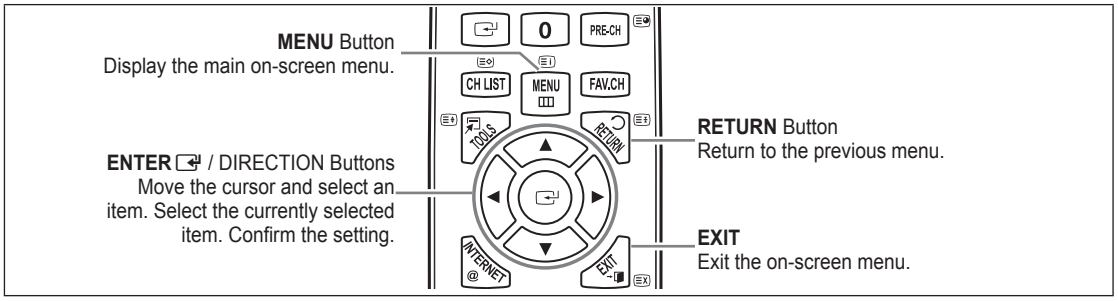
✎ If the remote control doesn't work, check the following:

- Is the TV power on?
- Are the plus and minus ends of the batteries reversed?
- Are the batteries drained?
- Is there a power outage or is the power cord unplugged?
- Is there a special fluorescent light or neon sign nearby?

OPERATION

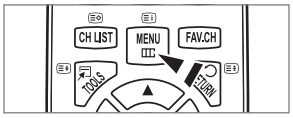
Viewing the menus

Before using the TV, follow the steps below to learn how to navigate the menu in order to select and adjust different functions.

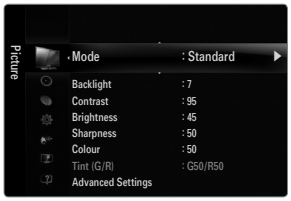


❑ Operation the OSD (On Screen Display)

The access step may differ depending on the selected menu.



1. Press the **MENU** button.



2. The main menu appears on the screen. The menu's left side has icons : **Picture, Sound, Channel, Setup, Input, Application, Support.**

3. Press the ▲ or ▼ button to select one of the icons.

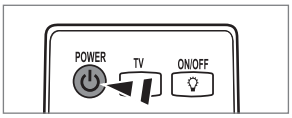
4. Then press the **ENTER** button to access the icon's sub-menu.
5. Press the ▲ or ▼ button to select the icon's submenu.

Help icon

6. Press the ◄ or ► button to decrease or increase the value of a particular item. The adjustment OSD may differ depending on the selected menu.
7. Press the **ENTER** button to complete the configuration. Press the **EXIT** button to exit.

Plug & Play Feature

When the TV is initially powered on, basic settings proceed automatically and subsequently.



1. Press the **POWER** button on the remote control.
   - The message **Select 'Home Use' when installing this TV in your home.** is displayed.
   - You can also use the **POWER** ⏻ button on the TV.
2. Press the ◄ or ► button to select **Store Demo** or **Home Use**, then the **ENTER** ↵ button.
   - We recommend setting the TV to **Home Use** mode for the best picture in your home environment.
   - **Store Demo** mode is only intended for use in retail environments.
   - If the unit is accidentally set to **Store Demo** mode and you want to return to **Home Use** (**Standard**): Press the Volume button on the TV. When the volume OSD is displayed, press and hold the **MENU** button on the TV for 5 seconds.

3. Press the **ENTER** ↵ button. Select the appropriate country by pressing the ▲ or ▼ button. Press the **ENTER** ↵ button to confirm your choice.
4. Press the ▲ or ▼ button to select the channel source to memorize. Press the **ENTER** ↵ button to select **Start**.
   - **Digital & Analogue**: Digital and Analogue channels.
   - **Digital**: Digital channels.
   - **Analogue**: Analogue channels.
   - The channel search will start and end automatically.
   - Press the **ENTER** ↵ button at any time to interrupt the memorization process.
   - After all the available channels are stored, the message **Set the Clock Mode.** is displayed.
5. Press the **ENTER** ↵ button. Press the ▲ or ▼ button to select **Auto**, then Press the **ENTER** ↵ button.
   - If you select **Manual**, Set current date and time is displayed.
   - If you have received a digital signal, the time will be set automatically. If not, select Manual to set the clock.
6. Press the ▲ or ▼ button to highlight the time zone for your local area. Press the **ENTER** ↵ button. (Australia only)
7. The description for the connection method providing the best HD screen quality is displayed. Check the description and press the **ENTER** ↵ button.
8. Press the ◄ or ► button to select **See Product Guide** or **Watch TV**, then the **ENTER** ↵ button.
   - **See Product Guide**: You are moved to the **Product Guide** where you can view the introduction to the main functions of your new HDTV.
   - **Watch TV**: You can watch the set broadcasting channel.

If you want to reset this feature...

1. Press the **MENU** button to display the menu. Press the ▲ or ▼ button to select **Setup**, then press the **ENTER** ↵ button.
2. Press the **ENTER** ↵ button again to select **Plug & Play**.
3. Enter your 4 digit PIN number. The default PIN number of a new TV set is '0-0-0-0'.
   - If you want to change PIN number, use the **Change PIN** function. (refer to page 22)
   - The **Plug & Play** feature is only available in the TV mode.

CHANNEL CONTROL

Configuring the Channel Menu

❑ Country

You can change the country.

- The PIN number input screen appears. Enter your 4 digit PIN number.
- The default PIN number of a new TV set is **0-0-0-0**. You can change the PIN by selecting **Change PIN** from the menu.
- Some functions may not be supported depending on the selected country.

❑ Auto Store

You can scan for the frequency ranges available to you (and availability depends on your country).

Automatically allocated programme numbers may not correspond to actual or desired programme numbers.

✎ If a channel is locked using the **Child Lock** function, the PIN input window appears.

■ Air / Cable

Antenna source to memorize

- **Digital & Analogue**: Digital and Analogue channels.
- **Digital**: Digital channels.
- **Analogue**: Analogue channels.

✎ Scans for all channels with active broadcast stations and stores them in the TV's memory.

✎ If you want to stop Auto Store, press the **ENTER** ↵ button.
The **Stop Auto Store?** message will be displayed.
Select **Yes** by pressing the ◄ or ► button, then press the **ENTER** ↵ button.

❑ Manual Store

✎ Scans for a channel manually and stores it in the TV's memory.

✎ If a channel is locked using the **Child Lock** function, the PIN input window appears.

■ Digital Channel

Manual store for digital channels.

✎ **Digital Channel** is only available in digital TV mode.

- **Channel**: Set the Channel number using the ▲, ▼ or number (0~9) buttons.
- **Frequency**: Set the frequency using the number buttons.
- **Bandwidth**: Set the bandwidth using the ▲, ▼ or number (0~9) buttons.

✎ When it has finished, channels are updated in the channel list.

■ Analogue Channel

Manual store for analogue channel.

✎ **Analogue Channel** is only available in analogue TV mode.

- **Programme** (Programme number to be assigned to a channel): Sets the programme number using the ▲, ▼ or number (0~9) buttons.
- **Colour System** → **Auto / PAL / SECAM / NTSC4.43**: Sets the colour system value using the ▲ or ▼ button.
- **Sound System** → **BG / DK / I / L**: Sets the sound system value using the ▲ or ▼ button.
- **Channel** (When you know the number of the channel to be stored): Press the ▲ or ▼ button to select **C** (Air channel) or **S** (Cable channel). Press the ► button, then press the ▲, ▼ or number (0~9) buttons to select the required number.
  - ✎ You can also select the channel number directly by pressing the number (0~9) buttons.
  - ✎ If there is abnormal sound or no sound, reselect the sound standard required.
- **Search** (When you do not know the channel numbers): Press the ▲ or ▼ button to start the search. The tuner scans the frequency range until the first channel or the channel that you selected is received on the screen.
- **Store** (When you store the channel and associated programme number): Set to **OK** by pressing the **ENTER** ↵ button.

✎ **Channel mode**

- P (Programme mode): When completing tuning, the broadcasting stations in your area have been assigned to position numbers from P00 to P99. You can select a channel by entering the position number in this mode.
- C (Air channel mode): You can select a channel by entering the assigned number to each air broadcasting station in this mode.
- S (Cable channel mode): You can select a channel by entering the assigned number for each cable channel in this mode.

❑ Full Guide / Mini Guide (Australia, Singapore only)

The EPG (Electronic Programme Guide) information is provided by the broadcasters. Programme entries may appear blank or out of date as a result of the information broadcast on a given channel. The display will dynamically update as soon as new information becomes available.

✎ You can also display the guide menu simply by pressing the **GUIDE** button. (To configure the **Default Guide**, refer to the descriptions.)

■ Full Guide

Displays the programme information as time ordered One hour segments. Two hours of programme information is displayed which may be scrolled forwards or backwards in time.

■ Mini Guide

The information of each programme is displayed by each line on the current channel Mini Guide screen from the current programme onwards according to the programme starting time order.

❑ Default Guide → Mini Guide / Full Guide (Australia, Singapore only)

You can decide whether to display either the **Mini Guide** or the **Full Guide** when the **GUIDE** button on the remote control is pressed.

❑ Channel List

For the detailed procedures on using the **Channel List**, refer to page 12.

You can select these options by simply pressing the **CH LIST** button on the remote control.

❑ Channel Mode

When press the **P** ∨/∧ button, Channels will be switched within the selected channel list.

- **Added Ch.**

  Channels will be switched within the memorized channel list.

- **Favourite Ch.**

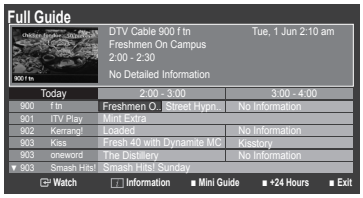
  Channels will be switched within the favourite channel list.

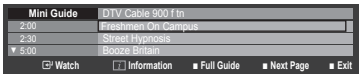
❑ Fine Tune

If the reception is clear, you do not have to fine tune the channel, as this is done automatically during the search and store operation. If the signal is weak or distorted, you may have to fine tune the channel manually.

- Fine tuned channels that have been saved are marked with an asterisk "*" on the right-hand side of the channel number in the channel banner.
- To reset the fine-tuning, select **Reset** by pressing the ▲ or ▼ button and then press the **ENTER** ↵ button.
- Only Analogue TV channels can be fine tuned.

Using the Full / Mini Guide





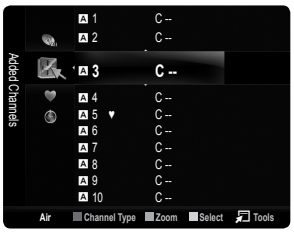
To...	Then...
Watch a programme in the EPG list	Select a programme by pressing the ▲, ▼, ◄, ► button.
Exit the guide	Press the blue button
If the next programme is selected, it is scheduled with the clock icon displayed. If the **ENTER** ↵ button is pressed again, press the ◄, ► button to select Cancel Schedules, the scheduling is canceled with the clock icon gone.	
View programme information	Select a programme of your choice by pressing the ▲, ▼, ◄, ► button. Then press the **INFO** button when the programme of your choice is highlighted. The programme title is on the upper part of the screen center.
Please click on **INFO** button for the detailed information. Channel Number, Running Time, Status Bar, Parental Level, Video Quality Information (HD / SD), Sound Modes, Subtitle or Teletext, languages of Subtitle or Teletext and brief summary of the highlighted programme are included on the detailed information. "..." will be appeared if the summary is long.	
Toggle between the **Mini Guide** or **Full Guide**	Press the red button repeatedly.
In Full Guide Scrolls backwards quickly (24 hours). Scrolls forwards quickly (24 hours).	 Press the green button repeatedly. Press the yellow button repeatedly.
In Mini Guide Display previous page quickly. Display next page quickly.	 Press the green button. Press the yellow button.

Managing Channels

Using this menu, you can add / delete or set favourite channels and use the programme guide for digital broadcasts.

- **All Channels**

  Shows all currently available channels.



- **Added Channels**

  Shows all added channels.

- **Favourites**

  Shows all favourite channels.

  To select the favourites channels you have set up, press the **FAV.CH** button on the remote control.

- **Programmed**

  Shows all current reserved programmes.

Select a channel in the **All Channels, Added Channels** or **Favourites** screen by pressing the ▲ / ▼ buttons, and pressing the **ENTER** button. Then you can watch the selected channel.

Using the Colour buttons with the Channel List

- **Red** (**Channel Type**): Toggle between your TV, Radio, Data / Other and All.
- **Green** (**Zoom**): Enlarges or shrinks a channel number.
- **Yellow** (**Select**): Selects multiple channel lists. You can perform the **Add** / **Delete**, **Add to Favourite** / **Delete from Favourite** or **Lock** / **Unlock** function for multiple channels at the same time. Select the required channels and press the yellow button to set all the selected channels at the same time.
- **TOOLS** (**Tools**): Displays the **Delete** (or **Add**), **Add to Favourite** (or **Delete from Favourite**), **Lock** (or **Unlock**), **Timer Viewing, Edit Channel Name, Edit Channel Number, Sort, Select All** (or **Deselect All**) or **Auto Store** menu. (The Options menus may differ depending on the situation.)

Channel Status Display Icons

A	An Analogue channel.	✓	A channel selected by pressing the yellow button.
♥	A channel set as a Favourite.		A programme currently being broadcast.
🔒	A locked channel.		A reserved programme

Channel List Option Menu (in All Channels / Added Channels / Favourites)

Press the **TOOLS** button to use the option menu.

Option menu items may differ depending on the channel status.

- **Add / Delete**

  You can delete or add a channel to display the channels you want.

All deleted channels will be shown on **All Channels** menu.

A gray-coloured channel indicates the channel has been deleted.

The **Add** menu only appears for deleted channels.

You can also delete a channel to the **Added Channels** or **Favourites** menu in the same manner.

- **Add to Favourite / Delete from Favourite**

  You can set channels you watch frequently as favourites.

The ♥ symbol will be displayed and the channel will be set as a favourite.

All favourite channels will be shown on **Favourite** menu.

Press the **TOOLS** button to display the **Tools** menu. You can also set the Add to Favourite by selecting **Tools** → **Add to Favourite**.

- **Lock / Unlock**

  You can lock a channel so that the channel cannot be selected and viewed. This function is available only when the **Child Lock** is set to **On**. (see page 22)

The PIN number input screen appears. Enter your 4 digit PIN number.

The default PIN number of a new TV set is **0-0-0-0**. You can change the PIN, by selecting **Change PIN** from the menu.

The 🔒 symbol will be displayed and the channel will be locked.

- **Timer Viewing**

  If you reserve a programme you want to watch, the channel is automatically switched to the reserved channel in the Channel List; even when you are watching another channel. To reserve a programme, set the current time first. (See page 21)

  - Only memorized channels can be reserved.
  - You can set the channel, day, month, year, hour and minute directly by pressing the number buttons on the remote control.
  - Reserving a programme will be shown on **Programmed** menu.
  - **Digital Programme Guide and Viewing Reservation**

    When a digital channel is selected, and you press the ► button, the Programme Guide for the channel appears. You can reserve a programme according to the procedures described above.

- **Edit Channel Name (analogue channels only)**

  Channels can labeled so that their call letters appear whenever the channel is selected.

  - The names of digital broadcasting channels are automatically assigned and cannot be labeled.

- **Edit Channel Number (digital channels only) (Australia, Singapore only)**

  - You can also edit the channel number by pressing the number buttons on the remote control.

- **Sort (analogue channels only)**

  This operation allows you to change the programme numbers of the stored channels. This operation may be necessary after using the auto store.

- **Select All / Deselect All**

  - **Select All**: You can select all the channels in the channel list.
  - **Deselect All**: You can deselect all the selected channels by pressing the yellow button.

  - You can perform the add / delete, add to Favourites / delete from Favourites, or lock / unlock function for multiple channels at the same time. Select the required channels and press the yellow button to set all the selected channels at the same time.
  - The ✓ mark appears to the left of the selected channels.
  - You can only select **Deselect All** when there is a selected channel.

- **Auto Store**

  - For further details on setting up options, refer to page 10.
  - If a channel is locked using the **Child Lock** function, the PIN input window appears.

Channel List Option Menu (in Programmed)

You can view, modify or delete a reservation.

- Press the **TOOLS** button to use the option menu.

- **Change Info**

  Select to change a viewing reservation.

- **Cancel Schedules**

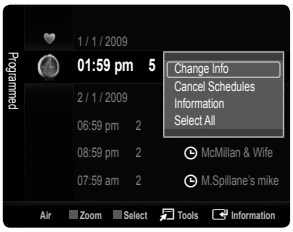
  Select to cancel a viewing reservation.

- **Information**

  Select to view a viewing reservation. (You can also change the reservation information.)

- **Select All**

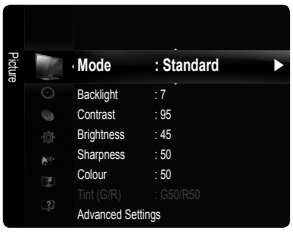
  Select all reserved programmes.



PICTURE CONTROL

Configuring the Picture Menu

❑ Mode



You can select the type of picture which best corresponds to your viewing requirements.

Press the **TOOLS** button to display the **Tools** menu. You can also set the size by selecting **Tools** → **Picture Mode**.

- **Dynamic**

  Selects the picture for increased definition in a bright room.

- **Standard**

  Selects the picture for the optimum display in a normal environment.

- **Natural**

  Selects the picture for optimum and eye-comfortable display.

  This function is not available in PC mode.

- **Movie**

  Selects the picture for viewing movies in a dark room.

❑ Backlight / Contrast / Brightness / Sharpness / Colour / Tint(G/R)

Your television has several setting options that allow you to control the picture quality.

- **Backlight**

  Adjusts the brightness of LED back light.

- **Contrast**

  Adjusts the contrast level of the picture.

- **Brightness**

  Adjusts the brightness level of the picture

- **Sharpness**

  Adjusts the edge definition of the picture.

- **Colour**

  Adjusts colour saturation of the picture.

- **Tint(G/R)**

  Adjusts the colour tint of the picture.

  Select a picture mode to be adjusted first. The adjusted values are saved for each picture mode.

  When you make changes to **Backlight, Contrast, Brightness, Sharpness, Colour** or **Tint(G/R)**, the OSD will be adjusted accordingly.

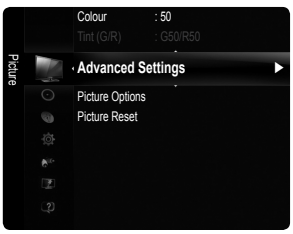
  In analogue TV, AV modes of the PAL system, you cannot use the **Tint(G/R)** Function.

  In PC mode, you can only make changes to **Backlight, Contrast** and **Brightness**.

  Settings can be adjusted and stored for each external device you have connected to an input of the TV.

  The energy consumed during use can be significantly reduced if the brightness level of the picture is lowered, which will reduce the overall running cost.

❑ Advanced Settings



Samsung's new TVs allow you to make even more precise picture settings than previous models.

Advanced Settings is available in **Standard** or **Movie** mode.

In PC mode, you can only make changes to **Dynamic Contrast**, **Gamma** and **White Balance** from among the **Advanced Settings** items.

- **Black Tone → Off / Dark / Darker / Darkest**

  You can select the black level on the screen to adjust the screen depth.

- **Dynamic Contrast → Off / Low / Medium / High**

  You can adjust the screen contrast so that the optimal contrast is provided.

- **Gamma**

  You can adjust the Primary Colour (Red, Green, Blue) Intensity.

■ **Colour Space**

Colour Space is a colour matrix composed of red, green and blue colours. Select your favourite Colour Space to experience the most natural colour.

- **Auto**: Auto Colour Space automatically adjusts to the most natural colour tone based on programme sources.
- **Native**: Native Colour Space offers deep and rich colour tone.
- **Custom**: Adjusts the colour range to suit your preference.

  ✎ **Customizing the Colour Space**

  – **Colour → Red / Green / Blue / Yellow / Cyan / Magenta**

  – Adjusts the Colour range to suit your preference. **Colour** is available when **Colour Space** is set to **Custom**.

  – **Red / Green / Blue**: In **Colour**, you can adjust the RGB values for the selected colour.

  – **Reset**: Resets the colour space to the default values.

■ **White Balance**

You can adjust the colour temperature for more natural picture colours.

- **R-Offset / G-Offset / B-Offset / R-Gain / G-Gain / B-Gain**: You can adjust the Colour 'temperature' in the light areas by changing the values of R, G, B, Recommended for advanced users only.
- **Reset**: The previously adjusted white balance will be reset to the factory defaults.

■ **Flesh Tone**

You can emphasize the pink 'flesh tone' in the picture.

✎ Changing the adjustment value will refresh the adjusted screen.

■ **Edge Enhancement → Off / On**

You can emphasize object boundaries in the picture.

■ **xvYCC → Off / On**

Setting the xvYCC mode to on increases detail and colour space when watching movies from an external device (ie. DVD player) connected to the HDMI or Component IN jacks.

✎ **xvYCC** is available when the picture mode is set to **Movie**, and the external input is set to HDMI or Component mode.

✎ This function may not be supported depending on your external device.

❑ Picture Options

✎ In PC mode, you can only make changes to the **Colour Tone** and **Size** from among the items in **Picture Options**.

■ **Colour Tone → Cool / Normal / Warm1 / Warm2 / Warm3**

You can select the most comfortable colour tone to your eyes.

✎ Settings can be adjusted and stored for each external device you have connected to an input of the TV.

✎ **Warm1**, **Warm2** or **Warm3** is only activated when the picture mode is **Movie**.

■ **Size**

You can select the picture size which best corresponds to your viewing requirements.

✎ Press the **TOOLS** button to display the **Tools** menu. You can also set the size by selecting **Tools → Picture Size**.

- **Auto Wide**: Automatically adjusts the picture size to the **16:9** aspect ratio. (New Zealand, Singapore only)
- **16:9**: Adjusts the picture size to 16:9 appropriate for DVDs or wide broadcasting.
- **Wide Zoom**: Magnify the size of the picture more than 4:3.
- **Zoom**: Magnifies the 16:9 wide picture (in the vertical direction) to fit the screen size.
- **4:3**: This is the default setting for a video movie or normal broadcasting.
- **Screen Fit**: Use the function to see the full image without any cutoff when **HDMI** (720p / 1080i / 1080p) or **Component** (1080i / 1080p) signals are input.

✎ Depending on the input source, the picture size options may vary.

✎ The items available may differ depending on the selected mode.

✎ In PC Mode, only **16:9** and **4:3** mode can be adjusted.

✎ Settings can be adjusted and stored for each external device you have connected to an input of the TV.

✎ Temporary image retention may occur when viewing a static image on the set for more than two hours.

✎ **Wide Zoom**: Press the ► button to Select **Position**, then press the **ENTER** button. Press the ▲ or ▼ button to move the screen up / down. Then press the **ENTER** button.

✎ **Zoom**: Press the ► button to Select **Position**, then press the **ENTER** button. Press the ▲ or ▼ button to move the picture up and down. Then press the **ENTER** button. Press the ► button to Select **Size**, then press the **ENTER** button. Press the ▲ or ▼ button to magnify or reduce the picture size in the vertical direction. Then press the **ENTER** button.

✎ After selecting **Screen Fit** in HDMI (1080i / 1080p) or Component (1080i / 1080p) mode: Select **Position** by pressing the ◄ or ► button. Use the ▲, ▼, ◄ or ► button to move the picture.

Reset: Press the ◄ or ► button to select **Reset**, then press the **ENTER** button. You can initialize the setting.

✎ If you use the **Screen Fit** function with HDMI 720p input, 1 line will be cut at the top, bottom, left and right as in the overscan function.

■ **Screen Mode → 16:9 / Wide Zoom / Zoom / 4:3 (New Zealand, Singapore only)**

When setting the picture size to Auto Wide in a 16:9 wide TV, you can determine the picture size you want to see the 4:3 WSS (Wide Screen Service) image or nothing. Each individual European country requires different picture size so this function is intended for users to select it.

- **16:9**: Sets the picture to 16:9 wide mode.
- **Wide Zoom**: Magnify the size of the picture more than 4:3.
- **Zoom**: Magnify the size of the picture vertically on screen.
- **4:3**: Sets the picture to 4:3 normal mode.

✎ This function is available in **Auto Wide** mode.

✎ This function is not available in PC, Component or HDMI mode.

■ **Digital NR → Off / Low / Medium / High / Auto**

If the broadcast signal received by your TV is weak, you can activate the Digital Noise Reduction feature to help reduce any static and ghosting that may appear on the screen.

✎ When the signal is weak, select one of the other options until the best picture is displayed.

■ **HDMI Black Level → Normal / Low**

You can directly select the black level on the screen to adjust the screen depth.

✎ This function is active only when the external input connects to HDMI (RGB signals).

■ **Film Mode → Off / Auto 1 / Auto 2**

The TV can be set to automatically sense and process film signals from all sources and adjust the picture for optimum quality.

✎ **Film Mode** is supported in TV, AV, COMPONENT(480i / 1080i) and HDMI(480i / 1080i).

■ **100Hz Motion Plus → Off / Clear / Standard / Smooth / Custom / Demo**

Removes drag from fast scenes with a lot of movement to provide a clearer picture.

✎ This function is not available in PC mode.

If you enable **100Hz Motion Plus**, noise may appear on the screen. If this occurs, set **100Hz Motion Plus** to **off** or select one of the other options.

- **Off**: Switches 100Hz Motion Plus off.
- **Clear**: Sets 100Hz Motion Plus to minimum.
- **Standard**: Sets 100Hz Motion Plus to medium.
- **Smooth**: Sets 100Hz Motion Plus to maximum.
- **Custom**: Adjusts the blur and judder reduction level to suit your preference.
  - **Blur Reduction**: Adjusts the blur reduction level in video sources.
  - **Judder Reduction**: Adjusts the judder reduction level in video sources with film signals.
  - **Reset**: Reset the custom settings.
- **Demo**: Displays the difference between 100Hz Motion Plus on and off modes.

■ **Blue Only Mode → Off / On**

This function is for AV device measurement experts. This function displays the blue signal only by removing the red and green signals from the video signal so as to provide a Blue Filter effect that is used to adjust the Colour and Tint of video equipment such as DVD players, Home Theatres, etc. Using this function, you can adjust the Colour and Tint to preferred values appropriate to the signal level of each video device using the Red / Green / Blue / Cyan / Magenta / Yellow Colour Bar Patterns, without using an additional Blue Filter.

✎ **Blue Only Mode** is available when the picture mode is set to **Movie** or **Standard**.

❑ Picture Reset → Reset Picture Mode / Cancel

Resets all picture settings to the default values.

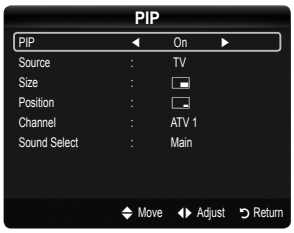
✎ **Reset Picture Mode**: Current picture values return to default settings.

Viewing Picture-in-Picture

You can display a sub picture within the main picture of set programme or video input. In this way, you can watch the picture of set programme or video input from any connected equipment while watching the main picture.

- Press the **TOOLS** button to display the **Tools** menu. You can also configure PIP related settings by selecting **Tools** → **PIP**.
- You may notice that the picture in the PIP window becomes slightly unnatural when you use the main screen to view a game or karaoke.

❑ PIP



Main picture	Sub picture
Component 1, 2 **HDMI1/DVI, HDMI2, HDMI3, HDMI 4** **PC**	TV, AV

- **PIP → Off / On**

  You can activate or deactivate the PIP function.

- **Source**

  You can select a source of the sub-picture.

  - You can only set Source by selecting **Tools** → **PIP** → **Source**.

- **Size →** ▭ **/** ▭ **/** ■■ **/** ■■

  You can select a size of the sub-picture.

- **Position →** ▭ **/** ▭ **/** ▭ **/** ▭

  You can select a position of the sub-picture.

  - In Double (■■, ■■) mode, **Position** cannot be selected.

- **Channel**

  You can select the channel for the sub-screen.

  - **Channel** is available when the **Source** is set to **TV**.

- **Sound Select → Main / Sub**

  You can listen to the sound of the sub (PIP) picture.

  Press the **TOOLS** button to display the Tools menu. You can also set the sound of the sub picture by selecting **Tools** → **PIP** → **Sound Select**.

  - **Main**: Used to listen to the sound of the main picture.
  - **Sub**: Used to listen to the sound of the sub picture.

Using Your TV as a Computer (PC) Display

Setting Up Your PC Software (Based on Windows XP)

The Windows display-settings for a typical computer are shown below. The actual screens on your PC will probably be different, depending upon your particular version of Windows and your particular video card. However, even if your actual screens look different, the same basic set-up information will apply in almost all cases. (If not, contact your computer manufacturer or Samsung Dealer.)

1. First, click on 'Control Panel' on the Windows start menu.
2. When the control panel window appears, click on 'Appearance and Themes' and a display dialog-box will appear.
3. When the control panel window appears, click on 'Display' and a display dialogbox will appear.
4. Navigate to the 'Settings' tab on the display dialog-box.

- The correct size setting (resolution): Optimum-1920 X 1080 pixels
- If a vertical-frequency option exists on your display settings dialog box, the correct value is '60' or '60 Hz'. Otherwise, just click 'OK' and exit the dialog box.

Display Modes

Both screen position and size will vary depending on the type of PC monitor and its resolution. The resolutions in the table are recommended.

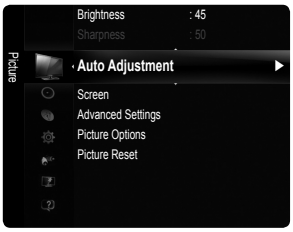
■ **D-Sub and HDMI/DVI Input**

Mode	Resolution	Horizontal Frequency (KHz)	Vertical Frequency (Hz)	Pixel Clock Frequency (MHz)	Sync Polarity (H / V)
IBM	640 x 350	31.469	70.086	25.175	+/-
	720 x 400	31.469	70.087	28.322	-/+
MAC	640 x 480	35.000	66.667	30.240	-/-
	832 x 624	49.726	74.551	57.284	-/-
	1152 x 870	68.681	75.062	100.000	-/-
VESA CVT	720 x 576	35.910	59.950	32.750	-/+
	1152 x 864	53.783	59.959	81.750	-/+
	1280 x 720	44.772	59.855	74.500	-/+
	1280 x 960	75.231	74.857	130.000	-/+
	1280 x 720	56.456	74.777	95.750	-/+
VESA DMT	640 x 480	31.469	59.940	25.175	-/-
	640 x 480	37.861	72.809	31.500	-/-
	640 x 480	37.500	75.000	31.500	-/-
	800 x 600	37.879	60.317	40.000	+/+
	800 x 600	48.077	72.188	50.000	+/+
	800 x 600	46.875	75.000	49.500	+/+
	1024 x 768	48.363	60.004	65.000	-/-
	1024 x 768	56.476	70.069	75.000	-/-
	1024 x 768	60.023	75.029	78.750	+/+
	1152 x 864	67.500	75.000	108.000	+/+
	1280 x 1024	63.981	60.020	108.000	+/+
	1280 x 1024	79.976	75.025	135.000	+/+
	1280 x 800	49.702	59.810	83.500	-/+
	1280 x 800	62.795	74.934	106.500	-/+
	1280 x 960	60.000	60.000	108.000	+/+
	1360 x 768	47.712	60.015	85.500	+/+
	1440 x 900	55.935	59.887	106.500	-/+
	1440 x 900	70.635	74.984	136.750	-/+
	1680 x 1050	65.290	59.954	146.250	-/+
VESA GTF	1280 x 720	52.500	70.000	89.040	-/+
	1280 x 1024	74.620	70.000	128.943	-/-
VESA DMT / DTV CEA	1920 x 1080p	67.500	60.000	148.500	+/+

- When using an HDMI / DVI cable connection, you must use the **HDMI IN 1(DVI)** jack.
- The interlace mode is not supported.
- The set might operate abnormally if a non-standard video format is selected.
- Separate and Composite modes are supported. SOG is not supported.
- Too long or low quality VGA cable can cause picture noise at high resolution modes (1920x1080 or 1600x1200).

Setting up the TV with your PC

Preset: Press the **SOURCE** button to select PC mode.



❑ Auto Adjustment

Auto Adjustment allows the PC screen of set to self-adjust to the incoming PC video signal. The values of fine, coarse and position are adjusted automatically.

Press the **TOOLS** button to display the **Tools** menu. You can also set the Auto Adjustment by selecting **Tools** → **Auto Adjustment**.

This function does not work in DVI-HDMI mode.

❑ Screen

■ **Coarse / Fine**

The purpose of picture quality adjustment is to remove or reduce picture noise. If the noise is not removed by Fine-tuning alone, then adjust the frequency as best as possible (Coarse) and Fine-tune again. After the noise has been reduced, readjust the picture so that it is aligned on the center of screen.

■ **PC Position**

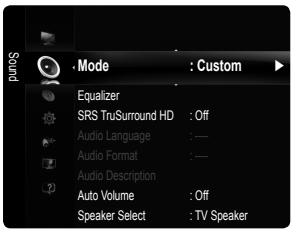
Adjust the PC's screen positioning if it does not fit the TV screen. Press the ▲ or ▼ button to adjusting the Vertical-Position. Press the ◄ or ► button to adjust the Horizontal-Position.

■ **Image Reset**

You can replace all image settings with the factory default values.

SOUND CONTROL

Configuring the Sound Menu



❑ Mode → Standard / Music / Movie / Clear Voice / Custom

You can select a sound mode to suit your personal preferences.

Press the **TOOLS** button to display the **Tools** menu. You can also configure the sound mode by selecting **Tools** → **Sound Mode**.

❑ Equalizer

The sound settings can be adjusted to suit your personal preferences.

- **Mode**

  You can select a sound mode to suit your personal preferences.

- **Balance**

  Controls the balance between the right and left speakers.

- **100Hz / 300Hz / 1KHz / 3KHz / 10KHz (Bandwidth Adjustment)**

  To adjust the level of different bandwidth frequencies

- **Reset**

  Resets the equalizer settings to the default values.

❑ SRS TruSurround HD → Off / On

SRS TruSurround HD is a patented SRS technology that solves the problem of playing 5.1 multichannel content over two speakers. TruSurround delivers a compelling, virtual surround sound experience through any two-speaker playback system, including internal television speakers. It is fully compatible with all multichannel formats.

Press the **TOOLS** button to display the **Tools** menu. You can also set the SRS TruSurround HD by selecting **Tools** → **SRS TS HD**.

❑ Audio Language (digital channels only)

You can change the default value for audio languages. Displays the language information for the incoming stream.

While viewing a digital channel, this function can be selected.

You can only select the language among the actual languages being broadcast.

❑ Audio Format → MPEG / Dolby Digital / Advanced (digital channels only)

When sound is emitted from both the main speaker and the audio receiver, a sound echo may occur due to the decoding speed difference between the main speaker and the audio receiver. In this case, use the TV Speaker function.

While viewing a digital channel, this function can be selected.

The **Audio Format** appears according to the broadcasting signal.

❑ Audio Description (digital channels only)

This is an auxiliary audio function that provides an additional audio track for visually challenged persons. This function handles the Audio Stream for the AD (Audio Description), when it is sent along with the Main audio from the broadcaster. Users can turn the Audio Description On or Off and control the volume.

- **Audio Description → Off / On**

  Turn the audio description function on or off.

- **Volume**

  You can adjust the audio description volume.

  Volume is active when **Audio Description** is set to **On**.

  While viewing a Digital channel, this function can be selected.

❑ Auto Volume → Off / On

Each broadcasting station has its own signal conditions, and so it is not easy to adjust the volume every time the channel is changed. This feature lets you automatically adjust the volume of the desired channel by lowering the sound output when the modulation signal is high or by raising the sound output when the modulation signal is low.

❑ Speaker Select → External Speaker / TV Speaker

If you want to hear the sound through separate speakers, cancel the internal amplifier.

- The volume and **MUTE** buttons do not operate when the **Speaker Select** is set to **External Speaker**.
- If you select **External Speaker** in the **Speaker Select** menu, the sound settings will be limited.

	TV's Internal Speakers	Audio Out (Optical, L/R Out) to Sound System
	RF, AV, Component, PC, HDMI	RF, AV, Component, PC, HDMI
TV Speaker	Sound Output	Sound Output
External Speaker	Mute	Sound Output
Video No Signal	Mute	Mute

❑ Sound Select

When the PIP feature is activated, you can listen to the sound of the sub (PIP) picture.

- For detailed procedures on setting up options, refer to page 17.

❑ Sound Reset → Reset All / Reset Sound Mode / Cancel

You can restore the Sound settings to the factory defaults.

- **Reset Sound Mode**: Current sound values return to default settings.

Selecting the Sound Mode

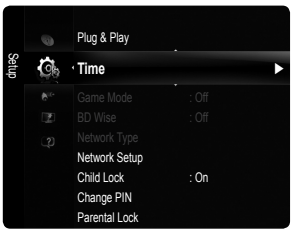
You can set the sound mode in the **Tools** menu. When you set to **Dual I II**, the current sound mode is displayed on the screen.

	Audio Type	Dual 1 / 2	Default
A2 Stereo	Mono	**MONO**	Automatic change
	Stereo	**STEREO ↔ MONO**	
	Dual	**DUAL 1 ↔ DUAL 2**	**DUAL 1**
NICAM Stereo	Mono	**MONO**	Automatic change
	Stereo	**MONO ↔ STEREO**	
	Dual	**MONO ↔ DUAL 1 ↔ DUAL 2**	**DUAL 1**

- If the stereo signal is weak and an automatic switching occurs, then switch to the mono.
- This function is only activated in stereo sound signal. It is deactivated in mono sound signal.
- This function is only available in TV mode.

Configuring the Setup Menu

❑ Time



Clock

Setting the clock is necessary in order to use the various timer features of the TV.

- The current time will appear every time you press the **INFO** button.
- If you disconnect the power cord, you have to set the clock again.

- **Clock Mode**
  You can set up the current time manually or automatically.
  - **Auto**: Set the current time automatically using the time from the digital broadcast.
  - **Manual**: Set the current time to a manually specified time.
- **Clock Set**
  You can set the current time manually.
  - You can set the day, month, year, hour and minute directly by pressing the number buttons on the remote control.
- **Time Zone (Australia only)**
  You can select your time zone.
  - Set up this item when you have set **Clock Mode** to **Auto**.

Sleep Timer → Off / 30 / 60 / 90 / 120 / 150 / 180

The sleep timer automatically shuts off the TV after a preset time (30, 60, 90, 120, 150 and 180 minutes).

- The TV automatically switches to standby mode when the timer reaches 0.
- To cancel the **Sleep Timer** function, select **Off**.
- Press the **TOOLS** button to display the **Tools** menu. You can also set the sleep timer by selecting **Tools** → **Sleep Timer**.

Timer 1 / Timer 2 / Timer 3

Three different on / off timer settings can be made. You must set the clock first.

- **On Time**: Set the hour, minute, and activate / inactivate. (To activate timer with the setting you've chosen, set to **Activate**.)
- **Off Time**: Set the hour, minute, and activate / inactivate. (To activate timer with the setting you've chosen, set to **Activate**.)
- **Volume**: Select the desired turn on volume level.
- **Source → TV / USB / TV Memory**
  You can select the TV, TV Memory or USB device content to be played when the TV turns on automatically. Select TV, TV Memory or USB. (Make sure that an USB device is connected to your TV.)
  - When there is only one photo file in the **USB** or the **TV memory**, Slide Show will not be executed.
- **Antenna** (when **Source** is set to **TV**)
  Select **ATV** or **DTV**.
- **Channel** (when **Source** is set to **TV**)
  Select the desired channel.
- **Contents** (when **Source** is set to **USB** or **TV Memory**)
  You can select a folder on the USB Device/TV Memory with the music or photo files to be played when the TV turns on automatically.
- **Repeat**: Select **Once, Everyday, Mon~Fri, Mon~Sat, Sat~Sun** or **Manual**.
  - When **Manual** is selected, press the ► button to select the desired day of the week. Press the **ENTER** button over the desired day and the ✓ mark will appear.

- You can set the hour, minute and channel by pressing the number buttons on the remote control.
- **Auto Power Off**
  When you set the timer On, the television will eventually turn off, if no controls are operated for 3 hours after the TV was turned on by the timer. This function is only available in timer On mode and prevents overheating, which may occur if a TV is on for too long time.

❑ Game Mode → Off / On

When connecting to a game console such as PlayStation™ or Xbox™, you can enjoy a more realistic gaming experience by selecting game menu.

- Restrictions on game mode (Caution)
  - To disconnect the game console and connect another external device, set **Game Mode** to **Off** in the setup menu.
  - If you display the TV menu in **Game mode**, the screen shakes slightly.
- **Game Mode** is not available in TV and PC mode.
- While PIP is in operation, the **Game Mode** function cannot be used.
- If the picture is poor when external device is connected to TV, check if **Game Mode** is **On**. Set **Game Mode** to **Off** and connect external devices.
- If **Game Mode** is On:
  - Picture Mode changes to **Standard** and Sound Mode changes to **Custom** automatically. The user cannot change these to other modes.
  - Sound Mode in the Sound menu is deactivated. Adjust the sound using the equalizer.
  - The Reset Sound function is activated. Selecting the Reset function after setting the equalizer resets the equalizer setting to the factory defaults.

❑ BD Wise → Off / On

Provides the optimal picture quality for SAMSUNG DVD, BD and HTS products which support WISESYNC. You can enjoy a richer picture when using them connected to the TV.

- Connect SAMSUNG products which support the TV and BD Wise using a HDMI cable.
- When the **BD Wise** set to **On**, the picture mode is automatically changed to the optimal resolution.
- BD Wise is available in HDMI mode.

❑ Network Type / Network Setup

For detailed procedures on setting up options, refer to the descriptions on pages 24~29.

❑ Child Lock → Off / On

This feature allows you to prevent unauthorized users, such as children, from watching unsuitable programme by muting out video and audio.

- Before the setup screen appears, the PIN number input screen appears. Enter your 4 digit PIN number.
- The default PIN number of a new TV set is **0-0-0-0**. You can change the PIN by selecting **Change PIN** from the menu.
- You can lock some channels in Channel List. (refer to page 12)
- **Child Lock** is available only in TV mode.

❑ Change PIN

You can change your personal ID number that is required to set up the TV.

- Before the setup screen appears, the PIN number input screen appears. Enter your 4 digit PIN number.
- The default PIN number of a new TV set is **0-0-0-0**.
- If you forget the PIN code, press the remote control buttons in the following sequence, which resets the PIN to 0-0-0-0: **POWER** (Off) → **MUTE** → 8 → 2 → 4 → **POWER** (On).

❑ Parental Lock

This feature allows you to prevent unauthorized users, such as children, from watching unsuitable programme by a 4-digit PIN (Personal Identification Number) code that is defined by the user.

- The **Parental Rating** item differs depending on the country.
- Before the setup screen appears, the PIN number input screen appears. Enter your 4 digit PIN number.
- The default PIN number of a new TV set is **0-0-0-0**. You can change the PIN by selecting **Change PIN** from the menu.
- When the parental ratings are set, the 🔒 symbol is displayed.
- **Allow All**: Press to unlock all TV ratings.
  Block All: Press to lock all TV ratings.

❑ Subtitle

You can activate and deactivate the subtitles. Use this menu to set the Subtitle Mode. **Normal** under the menu is the basic subtitle and **Hard of hearing** is the subtitle for a hearing-impaired person.

- **Subtitle → Off / On**

  Switches subtitles on or off.

- **Mode → Normal / Hard of hearing**

  Sets the subtitle mode.

- **Subtitle Language**

  Set the subtitle language.

  ✎ If the programme you are watching does not support the **Hard of hearing** function, **Normal** automatically activates even though **Hard of hearing** mode is selected.

  ✎ English is the default in cases where the selected language is unavailable in the broadcast.

  ✎ You can select these options simply by pressing the **SUBT.** button on the remote control.

❑ Teletext Language

You can set the Teletext language by selecting the language type.

✎ English is the default in cases where the selected language is unavailable in the broadcast.

❑ Preference

- **Primary Audio Language / Secondary Audio Language / Primary Subtitle Language / Secondary Subtitle Language / Primary Teletext Language / Secondary Teletext Language**

  Using this feature, users can select one of the languages. The language selected here is the default when the user selects a channel.

  If you change the language setting, the Subtitle Language, Audio Language, and the Teletext Language of the Language menu are automatically changed to the selected language.

  The Subtitle Language, Audio Language, and the Teletext Language of the Language menu show a list of languages supported by the current channel and the selection is highlighted. If you change this language setting, the new selection is only valid for the current channel. The changed setting does not change the setting of the Primary Subtitle Language, Primary Audio Language, or the Primary Teletext Language of the Preference menu.

❑ Digital Text → Disable / Enable (New Zealand only)

If the programme is broadcast with digital text, this feature is enabled.

✎ **MHEG (Multimedia and Hypermedia Information Coding Experts Group)**

An International standard for data encoding systems used in multimedia and hypermedia. This is at a higher level than the MPEG system which includes data-linking hypermedia such as still images, character service, animation, graphic and video files as well as multimedia data. MHEG is user runtime interaction technology and is being applied to various fields including VOD (Video-On-Demand), ITV (Interactive TV), EC (Electronic Commerce), tele-education, tele-conferencing, digital libraries and network games.

✎ At present, the broadcasting station provides EPG content only. Providing more content is scheduled for the future.

✎ If **Digital Text** is set to **Disable**, the EPG (Electronic Program Guide) will not work.

❑ Light Effect → Off / In Standby / Watching TV / Always

You can turn on/off the LED on the front of TV according to the situation. Use it for saving power or when the LED dazzles your eyes.

- **Off**: LED is always off.
- **In Standby**: Turns the LED on in standby mode.
- **In Watching TV**: Turns the LED on while watching TV.
- **Always**: LED is always on.

  ✎ Set the **Light Effect** to **Off** to reduce the power consumption.

❑ Melody → Off / Low / Medium / High

A melody sound can be set to come on when the TV is powered On or Off.

✎ **The Melody does not play**

- When no sound is output from the TV because the **MUTE** button has been pressed.
- When no sound is output from the TV because the (–) Volume button has been pressed.
- When the TV is turned off by Sleep Timer function.

❑ **Energy Saving → Off / Low / Medium / High / Auto**

This feature adjusts the brightness of the TV in order to reduce power consumption. When watching TV at night, set the **Energy Saving** mode option to **High** to reduce eye fatigue as well as power consumption.

Press the **TOOLS** button to display the **Tools** menu. You can also set the Energy Saving option by selecting **Tools** → **Energy Saving**.

❑ **PIP**

For further details on setting up options, refer to page 17.

Network Connection

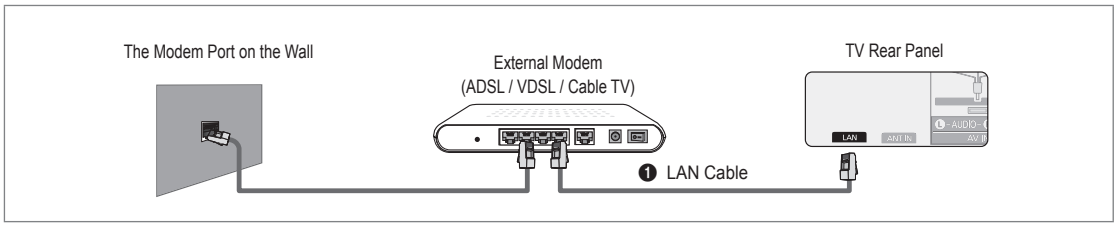
You can set up the Internet Protocol so that you can communicate with various connected networks.

❑ **Network Connection - Cable**

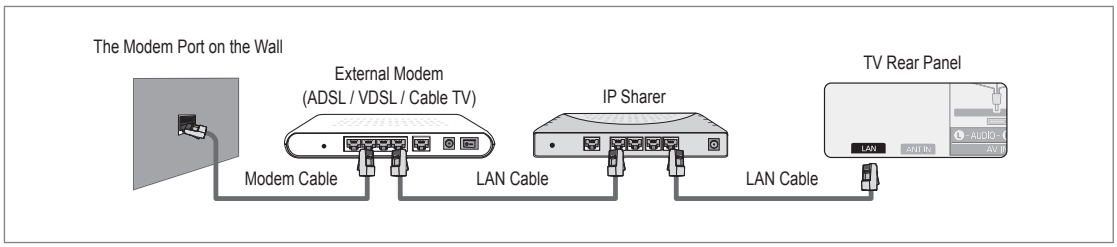
■ **LAN Connection for a DHCP Environment**

The procedures to set up the network using Dynamic Host Configuration Protocol (DHCP) are described below. Since an IP address, subnet mask, gateway, and DNS are automatically allocated when DHCP is selected, you do not have to enter them manually.

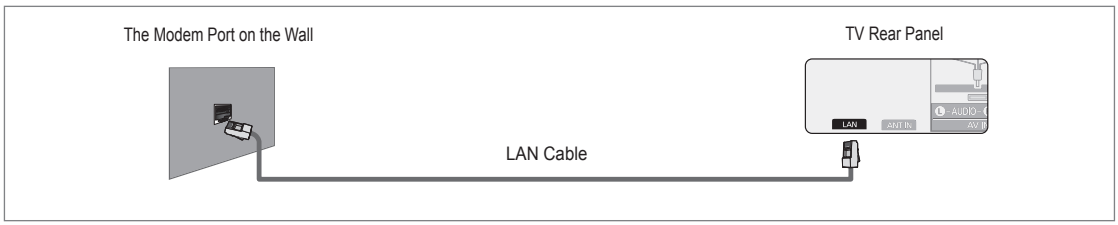
1. Connect the LAN port on the rear panel of the TV and the external modem with a LAN Cable.
2. Connect the Modem port on the wall and the external modem with a Modem Cable.



You can connect the LAN via a Sharer (Router).



You can connect the LAN port and the TV directly depending on your network status.

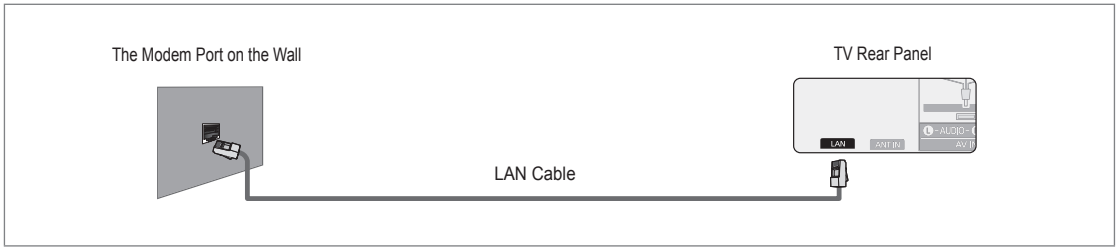


- The terminals (the position of the port and the type) of the external device may differ depending on the manufacturer.
- If the IP address allocation by the DHCP server has failed, turn the external modem off, turn it on again after at least 10 seconds and then try again.
- For the connections between the external modem and the Sharer (Router), refer to the owner's manual of the corresponding product.
- You can connect the TV to the LAN directly without connecting it through a Sharer (Router)
- You cannot use a manual-connection-type ADSL modem because it does not support DHCP. You have to use an automatic-connection-type ADSL modem.

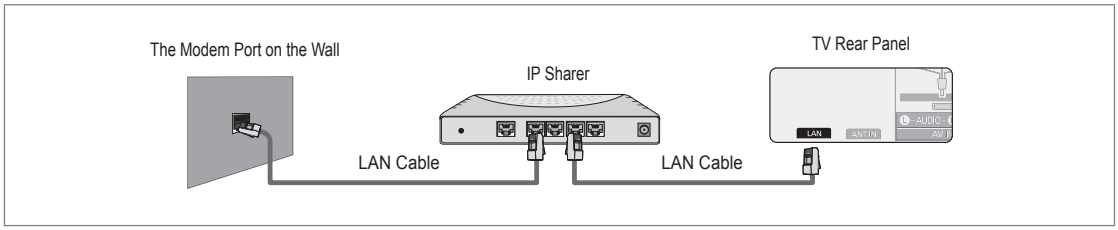
■ **LAN Connection for Static IP Environment**

The procedures to set up the network using a static IP address are described below. You have to manually enter the IP address, subnet mask, gateway, and DNS that are provided by your Internet Service Provider (ISP).

1. Connect the LAN port on the rear panel of the TV and the LAN port on the wall using the LAN cable.



You can connect the LAN via a Sharer (Router).



- The terminals (the position of the port and the type) of the external device may differ depending on the manufacturer.
- If you are using a static IP address, your ISP will inform you of the IP address, subnet mask, gateway, and DNS. You must enter these values to complete the network settings. If you do not know the values, ask your network administrator.
- For the information on how to configure and connect a Sharer (Router), refer to the owner's manual for the corresponding product.
- You can connect the TV to the LAN directly without connecting it through a Sharer (Router).
- If you use an IP Sharer (IP Router) that supports DHCP, you can set up the device as either DHCP or static IP.
- For the procedures to use a static IP address, ask your Internet Service Provider.

❑ Network Connection - Wireless

You can connect to the network wirelessly through a wireless IP sharer.

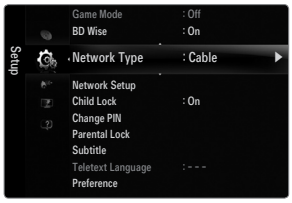
1. Connect the 'Samsung Wireless LAN Adapter' into the **USB1(HDD)** or **USB2** terminal of the TV.

- You must use the 'Samsung Wireless LAN Adapter'(WIS09ABGN) to use a wireless network.
- Samsung's Wireless LAN adapter is sold separately. The WIS09ABGN Wireless LAN adapter is offered by select retailers, Ecommerce sites and Samsungparts.com.
- To use a wireless network, your TV must be connected to a wireless IP sharer. If the wireless IP sharer supports DHCP, your TV can use a DHCP or static IP address to connect to the wireless network.
- Samsung's Wireless LAN adapter supports IEEE 802.11A, IEEE 802.11B, IEEE 802.11G, IEEE 802.11N. When you play DLNA video over IEEE 802.11B/G connection, the video may not be played smoothly.
- If the wireless IP sharer allows you to turn the Ping connection function on/off, turn it on.
- Select a channel for the wireless IP sharer that is not currently being used. If the channel set for the wireless IP sharer is currently being used by another device nearby, this will result in interference and communications may fail.
- If you apply a security system other than the systems listed blow, it will not work with the TV.
  - When applying the security key for the AP (wireless IP sharer), only the following is supported.
    1) Authentication Mode : OPEN, SHARED, WPAPSK, WPA2PSK
    2) Encryption Type : WEP, TKIP, AES
  - When applying the security key for the Ad-hoc mode, only the following is supported.
    1) Authentication Mode : SHARED, WPANONE
    2) Encryption Type : WEP, TKIP, AES
- If your AP supports WPS(Wi-Fi Protected Setup), you can connect to the network via PBC (Push Button Configuration) or PIN (Personal Indentification Number). WPS will automatically configure the SSID and WPA key in either mode.
- If the device isn't certified, it may not connect to the TV via the 'Samsung Wireless LAN Adapter'.

Setting the Network

❑ Network Type

Select Cable or Wireless as the method to connect to the network.



✎ The menu is activated only if the 'Samsung Wireless LAN Adapter' is connected.

■ **Cable**

Connect to the network using a cable.

■ **Wireless**

Connect to the network wirelessly.

❑ Network Setup

■ **Cable Network Setup** (when **Network Type** is set to **Cable**)

✎ Please check if the LAN cable is connected.

- **Internet Protocol Setup → Auto / Manual**
- **Network Test**: You can test or confirm the network connection status after setting up the network.

✎ When unable to connect to a wired network

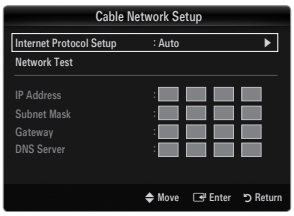
If your Internet service provider has registered the MAC address of the device used to connect to the Internet for the first time and authenticates the MAC address each time you connect to the Internet, your TV may not be able to connect to the Internet as the MAC address differs from that of the device (PC).

In this case, ask your Internet service provider about the procedures to connect devices other than your PC (such as your TV) to the Internet. If your Internet service provider requires an ID or password to connect to the Internet (network), your TV may not be able to connect to the Internet. In this case, you have to enter your ID or password when connecting to the Internet using an Internet Sharer (Router).

The internet connection may fail due to a firewall problem. In this case, contact your Internet service provider. If you cannot connect to the Internet even if you have followed the procedures of your Internet service provider, please contact Samsung Electronics.

Cable Network Setup-Auto

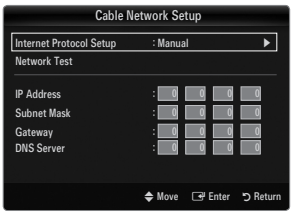
If you connect the LAN cable and it supports DHCP, the Internet Protocol (IP) Settings are automatically configured.



1. Set **Network Type** to **Cable**.
2. Select **Cable Network Setup**.
3. Set **Internet Protocol Setup** to **Auto**.
   ✎ The Internet Protocol is set automatically.
4. Select **Network Test** to check the network connectivity.

Cable Network Setup-Manual

To connect the TV to the LAN using a static IP address, you must set up the Internet Protocol (IP).


Cable Network Setup
Internet Protocol Setup : Manual
Network Test
IP Address : 0 0 0 0
Subnet Mask : 0 0 0 0
Gateway : 0 0 0 0
DNS Server : 0 0 0 0
Move Enter Return

1. Set **Network Type** to **Cable**.
2. Select **Cable Network Setup**.
3. Set **Internet Protocol Setup** to **Manual**.
4. Set up **IP Address, Subnet Mask, Gateway** and **DNS Server**.
   ✎ Press the number buttons on the remote control when you set the Network manually.
5. Select **Network Test** to check the network connectivity.

■ **Wireless Network Setup**

✎ The menu is activated only if the 'Samsung Wireless LAN Adapter' is connected.

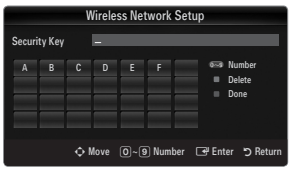
- **Internet Protocol Setup → Auto / Manual**
- **Network Test**: You can test or confirm the network connection status after setting up the network.

When unable to connect to an AP(Access Point)

Your TV may fail to locate an AP(Access Point) that is configured as a private SSID type. In this case, please change the AP settings and try again. If your Internet service provider has registered the MAC address of the device used to connect to the Internet for the first time and authenticates the MAC address each time you connect to the Internet, your TV may not be able to connect to the Internet as the MAC address differs from that of the device (PC).

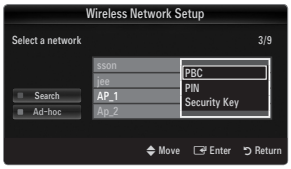
In this case, ask your Internet service provider about the procedures to connect devices other than your PC (such as your TV) to the Internet. If you cannot connect to the Internet even if you have followed the procedures of your Internet service provider, please contact a Samsung Electronics.

- **Select a network**
  - Access Point: You can select the IP sharer to use when using a wireless network.
    - If a wireless Access Point is not in the Access Point list, press the Red button.
    - When the connection is made, you will be returned to the screen automatically.
    - If you have selected an Access Point with a security authentication: The Security Key input screen appears. Enter the security key and press the Blue button on the remote control.
    - If security encryption type is WEP, 0~9, A~F will be available when you input security key.

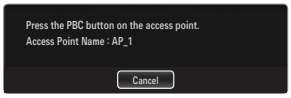


Connecting WPS (Wi-Fi Protected Setup)

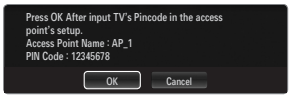
- If **Security Key** is already set: In access point list, select **WPS**.
  - You can select **PBC, PIN, Security Key**.



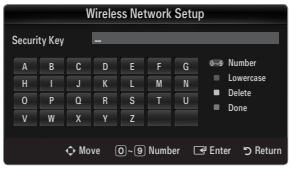
  - Connecting by using **PBC**: Select a **PBC** (Push Button Configuration). Press the PBC button on the AP (access point) within 2minutes, and wait for connection.



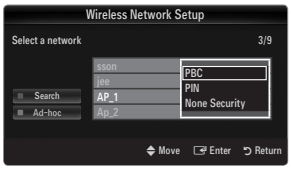
  - Connecting by using **PIN**: Select a **PIN** (Personal Identification Number).
    - The message showing the PIN Code is displayed. Input the PIN Code at AP device within 2 minutes. Select **OK** and wait for connection.
    - Try again if connecting operation doesn't work
    - When the connection is not established although tried again, reset the access point. Please refer to a manual of each access point.



  - Connecting by using **Security Key**: When selecting **Security Key**, the input window is displayed. Input the security key and press Blue button.
    - Try again if connecting operation doesn't work.



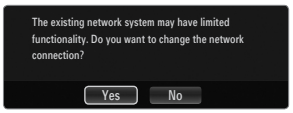
- If **Security Key** is not set: When the security setting of AP that supports WPS is NONE, you can select **PBC, PIN, None Security**. **None Security** is capable of connecting to AP directly without using WPS function.
  - Process of **PBC, PIN** is same as above. Refer to if **Security Key** is already set.
  - Try again if connecting operation doesn't work.



– **Ad-hoc**: You can connect to a mobile device without an access point through the 'Samsung Wireless LAN Adapter' by using a peer to peer network.

How to connect to new Ad-hoc

1. Choose **Select a network**, then a device list is displayed.
2. While in the device list, press the Blue button on the remote or select **Ad-hoc**.
   - The message **The existing network system may have limited functionality. Do you want to change the network connection?** is displayed.
3. Input the generated **Network Name(SSID)** and **Security Key** into the device you want to connect.



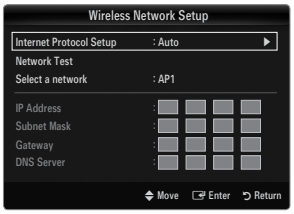
How to connect an existing Ad-hoc device

1. Choose **Select a network**, the device list is displayed.
2. Select the device you want in the Device list.
3. If security key was applied, input the security key again.
   - If network doesn't operate normally, please check the **Network Name(SSID)** and **Security Key** again. If the **Security Key** is incorrect, it may be the reason for the malfunction.

Wireless Network Setup-Auto

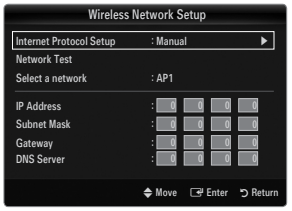
If you want to connect AP, AP should support DHCP. Only devices which support Ad-hoc mode can be connected without DHCP.

1. Set **Network Type** to **Wireless**.
2. Select **Wireless Network Setup**.
3. Set **Internet Protocol Setup** to **Auto**.
   - The Internet Protocol is set automatically.
4. Select a network through **Select a network**.
5. Select **Network Test** to check the network connectivity.



Wireless Network Setup-Manual

1. Set **Network Type** to **Wireless**.
2. Select **Wireless Network Setup**.
3. Set **Internet Protocol Setup** to **Manual**.
4. Set up **IP Address, Subnet Mask, Gateway** and **DNS Server**.
   - Press the number buttons on the remote control when you set the Network manually.
5. Select a network through **Select a network**.
6. Select **Network Test** to check the network connectivity.

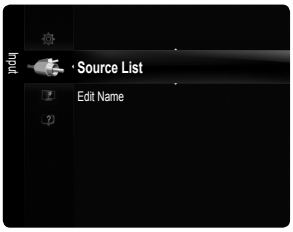


INPUT / SUPPORT

Configuring the Input Menu

❑ Source List

Use to select TV or other external input sources such as DVD / Blu-ray players / Satellite receivers (Set-Top Box) connected to the TV. Use to select the input source of your choice.



Press the **SOURCE** button on the remote control to view an external signal source. TV mode can be selected by pressing the **TV** button.

- **TV / AV / Component / PC / HDMI1/DVI / HDMI2 / HDMI3 / HDMI4 / USB1 / USB2**

You can choose only those external devices that are connected to the TV. In the **Source List**, connected inputs will be highlighted and sorted to the top. Inputs that are not connected will be sorted to the bottom.

If USB devices are connected to the **USB1(HDD)** and **USB2** jacks, they are displayed as USB1 and USB2 in order.

PC always stays activated.

Using the Colour buttons on the remote with the Source list

– **Red** (**Refresh**): Refreshes the connecting external devices.

– **TOOLS** (**Tools**): Displays the **Edit Name** and **Information** menus.

❑ Edit Name

Name the device connected to the input jacks to make your input source selection easier.

- **VCR / DVD / Cable STB / Satellite STB / PVR STB / AV Receiver / Game / Camcorder / PC / DVI PC / DVI / TV / IPTV / Blu-ray / HD DVD / DMA**

When a PC with a resolution of 1920 x 1080@60Hz is connected to the **HDMI IN 1(DVI)** port, you should set the **HDMI1/DVI** mode to **DVI PC** in the **Edit Name** of the **Input** mode.

When connecting an HDMI/DVI cable to the **HDMI IN 1(DVI)** port, you should set the **HDMI1/DVI** mode to **DVI** or **DVI PC** in the **Edit Name** of the **Input** mode. In this case, a separate sound connection is required.

Configuring the Support Menu

❑ Product Guide

The Product Guide gives you information on the most important features of this TV.
The descriptions provided by this function are in English only.

Picture Quality	**Full HD 1080p**
	Mega Contrast
	100Hz Motion Plus
	Picture Mode
Medi@2.0	**Internet@TV-Content Service**
	Content Library Flash
	USB2.0 Movie
	DLNA Wireless
Eco-Friendly	**Energy Saving Mode**
	Eco Material

❑ Self Diagnosis

- **Picture Test**

If you think you have a picture problem, perform the picture test. Check the colour pattern on the screen to see if the problem still exists.

- **Yes**: If the test pattern does not appear or there is noise in the test pattern, select **Yes**. There may be a problem with the TV. Contact Samsung's call center for assistance.
- **No**: If the test pattern is properly displayed, select **No**. There may be a problem with your external equipment. Please check your connections. If the problem still persists, refer to the external device's user manual.

■ **Sound Test**

If you think you have a sound problem, please perform the sound test. You can check the sound by playing a built-in melody sound through the TV.

- If you hear no sound from the TV's speakers, before performing the sound test, make sure **Speaker Select** is set to **TV speaker** in the Sound menu.
- The melody will be heard during the test even if **Speaker Select** is set to **External Speaker** or the sound is muted by pressing the **MUTE** button.
- **Yes**: If during the sound test you can hear sound only from one speaker or not at all, select **Yes**. There may be a problem with the TV. Contact Samsung's call center for assistance.
- **No**: If you can hear sound from the speakers, select **No**. There may be a problem with your external equipment. Please check your connections. If the problem still persists, refer to the external device's user manual.

■ **Signal Information (digital channels only)**

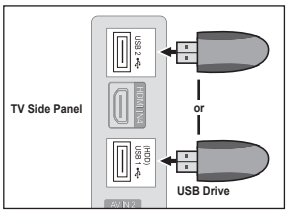
Unlike analogue channels, which can vary in reception quality from 'snowy' to clear, digital (HDTV) channels have either perfect reception quality or you will not receive them at all. So, unlike analogue channels, you cannot fine tune a digital channel. You can, however, adjust your antenna to improve the reception of available digital channels.

- If the signal strength meter indicates that the signal is weak, physically adjust your antenna to increase the signal strength. Continue to adjust the antenna until you find the best position with the strongest signal.

❑ Software Upgrade

To keep your product up-to-date with new Digital Television features then software upgrades are periodically broadcast as part of the normal Television signal. It will automatically detect these signals and display the software upgrade banner. You are given the option to install the upgrade.

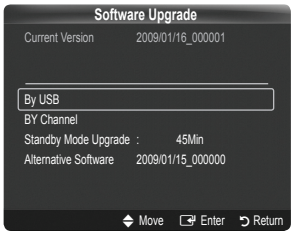
- Current Version shows version of the software being installed in the TV.
- Alternative Software shows the previous version that can be replaced.
- Software is represented as 'Year/Month/Day_Version'. The more recent the date, the newer the software version. Installing the latest version is recommended.



■ **By USB**

Insert a USB drive containing the firmware upgrade into TV. Please be careful to not disconnect the power or remove the USB drive while upgrades are being applied. The TV will turn off and turn on automatically after completing the firmware upgrade. Please check the firmware version after the upgrades are complete. When software is upgraded, video and audio settings you have made will return to their default (factory) settings.

We recommend you write down your settings so that you can easily reset them after the upgrade.



■ **By Channel**

Upgrades the software using the broadcasting signal.

- If the function is selected during the software transmission period, this function searches for available software and downloads the software.
- The time required to download the software is determined by the signal status.

■ **Standby Mode Upgrade**

To continue software upgrade with master power on, Select On by pressing the ▲ or ▼ button. 45 minutes after entering standby mode, a manual upgrade is automatically conducted. Since the power of the unit is turned on internally, the screen may be on slightly for the LED product. This phenomenon may continue for more than 1 hour until the software upgrade is completed.

■ **Alternative Software**

If Alternative Software is existing, this menu will be activated. You can change the software to previous version.

- If software was changed, existing software is displayed.
- You can change current software to alternative software by 'Alternative Software'.

❑ HD Connection Guide

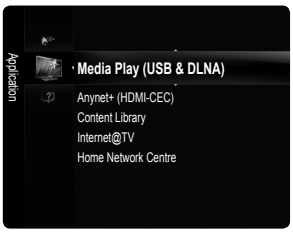
This menu presents the connection method that provides the optimal quality for the HD TV.
Refer to this information when connecting external devices to the TV.

❑ Contact Samsung

View this information when your TV does not work properly or when you want to upgrade the software.
You can view the information regarding the call center, product and software file download method.

MEDIA PLAY (USB & DLNA)

Connecting a USB Device



1. Press the **POWER** button to turn the TV on.
2. Connect a USB device containing photo, music and/or movie files to the **USB1(HDD)** or **USB2** jack on the side of the TV.
3. When the **Application** selection screen is displayed, press the **ENTER** ↵ button to select **Media Play (USB & DLNA)**.
   - MTP (Media Transfer Protocol) is not supported.
   - The file system supports FAT16, FAT32 and NTFS.
   - Certain types of USB Digital camera and audio devices may not be compatible with this TV.
   - **Media Play** only supports USB Mass Storage Class devices (MSC). MSC is a Mass Storage Class Bulk-Only Transport device. Examples of MSC are Thumb drives, Flash Card Readers and USB HDD (USB HUB are not supported.).
   - Please connect directly to the USB port of your TV. If you are using a separate cable connection, there may be a USB compatibility problem.
   - Before connecting your device to the TV, please back up your files to prevent them from damage or loss of data. SAMSUNG is not responsible for any data file damage or data loss.
   - Connect a USB HDD to the dedicated port, **USB1 (HDD)** port. However, if the connected device requires high power, the **USB1 (HDD)** may fail to support the device.
   - Do not disconnect the USB device while it is loading.
   - MSC supports MP3 and JPEG files, while a PTP device supports JPEG files only.
   - The higher the resolution of the image, the longer it takes to display on the screen.
   - The maximum supported JPEG resolution is 15360X8640 pixels.
   - For unsupported or corrupted files, the 'Not Supported File Format' message is displayed.
   - If sort key is set to Basic View, up to 1000 files can be displayed in each folder. The other sort key can display up to 10000 files.
   - MP3 files with DRM that have been downloaded from a non-free site cannot be played. Digital Rights Management (DRM) is a technology that supports the creation of content, the distribution and management of the content in an integrated and comprehensive way, including the protection of the rights and interests of the content providers, the prevention of the illegal copying of contents, as well as managing billings and settlements.
   - When moving to a photo, loading may take a few seconds. At this point, the loading icon will appear at the screen.
   - If more than 2 PTP devices are connected, you can only use one at a time.
   - If more than one MSC device is connected, some of them may not be recognized. If a device requires high power (more than 500mA or 5V), the USB device may not be supported.
   - If a over-power(Fail add new device USB1/USB2 Power Overload) warning message is displayed while you connecting or using a USB device, the device may not be recognized or may malfunction.

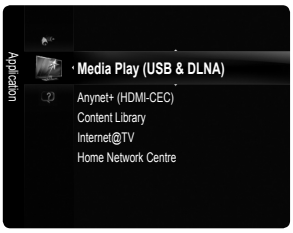
Using the Remote Control Button in Media Play Menu

Button	Operations
▲/▼/◄/►	Move the cursor and select an item.
ENTER ↵	Select the currently selected item. While playing a slide show, movie, or music file: - Pressing the **ENTER** ↵ button during play pauses the play. - Pressing the **ENTER** ↵ button during pause resumes the play.
►/II	Play or pause the Slide Show, music or movie.
RETURN	Return to the previous menu.
TOOLS	Run various functions from the Photo, Music and Movie menus.
■	Stop the current slide show, Music or Movie file.
◄◄/►►	Show file information.
INFO	Show file information.
MEDIA.P	Exit **Media Play** mode.
∧ P ∨, EXIT, TV	Stop **Media Play** mode and Returns to TV mode.

Media Play Function

This function enables you to view and listen to photo, music and/or movie files saved on a USB Mass Storage Class (MSC) device.

Entering the Media Play (USB & DLNA) Menu



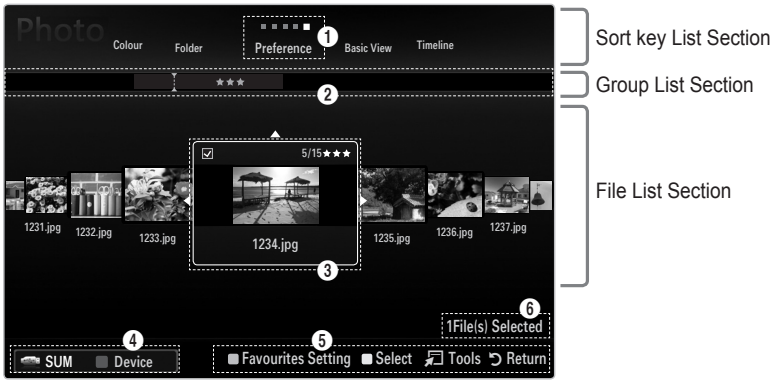
1. Press the **MENU** button. Press the ▲ or ▼ button to select **Application**, then press the **ENTER** button.
2. Press the ▲ or ▼ button to select **Media Play (USB & DLNA)**, then press the **ENTER** button.
   - The **Media Play (USB & DLNA)** menu is displayed.
   - Press the **MEDIA.P** button on the remote control to display the Media Play menu.
   - Press the **SOURCE** button on the remote control to view the source list. Then Press the ▲ or ▼ button to select **USB**.
3. Press the Red button, then press the ▲ or ▼ button to select the TV memory or USB Memory. Press the **ENTER** button.
   - This function differs depending on the TV Memory / USB Memory Device / DLNA server.
   - The selected USB device name appears at the bottom left of the screen.
4. Press the ◄ or ► button to select an icon (**Photo, Music, Movie, Setup**), then press the **ENTER** button.
   - To exit **Media Play** mode, press the **MEDIA.P** button on the remote control.

Removing a USB Memory Device Safely

You can remove the device safely from the TV.

1. Press the **TOOLS** button in the Media Play file list screen, or while a Slide Show, music or movie is being played.
2. Press the ▲ or ▼ button to select **Remove Safely**, then press the **ENTER** button.
3. Remove the USB device from the TV.

Screen Display



Move to either 'Sort key List Section', 'Group List Section' or 'File List Section' using the Up and Down buttons. After selecting a section, press the ◄ or ► buttons to select an item.

❶ Current Sort key: This field shows the current standard for sorting files. Press the ◄ or ► button to change the standard for sorting files.

❷ View Groups: Shows the detailed groups of the files sorted according the selected Sort key. The sort group where the currently selected file is contained is highlighted.

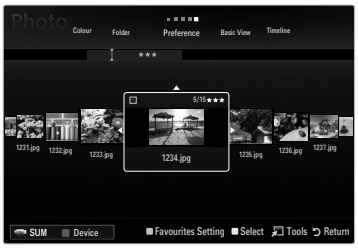
❸ Currently selected file: The selected file is the file you can now control. Photo and movie files are displayed as thumbnail images.

❹ Current Device: Shows the currently selected device name. Press the Red button to select a device.
- Red (**Device**) button: Selects a connected device.

❺ Help Items
- Green (**Favourites Setting**) button: Changes the Favourites Setting for the selected file. Press this button repeatedly until the desired value appears.
- Yellow (**Select**) button: Selects file from the file list. Selected files are marked with a symbol ✓. Press the yellow button again to cancel a file selection.
- **TOOLS** (**Tools**) button: Displays the option menus. (The option menu changes according to the current status.)

❻ Item Selection Information: Shows the number of files that are selected by pressing the Yellow button.

Sorting the Photo List



You can sort photos in the Photo List by a particular standard.

1. Press the **MEDIA.P** button.
2. Press the ◄ or ► button to select **Photo**, then press the **ENTER** button.
3. Press the ▲ button to move to the Sort key Section.
4. Press the ◄ or ► button to select a sorting standard. (**Basic View, Timeline, Colour, Folder, Preference**)
   - The photos are sorted according to the newly selected sorting standard.
5. Press the ▼ button to move to the File List Section. Press the (Play)/ **ENTER** button to start the Slide Show in the order you selected.
   - To move to the previous/next group, press the (REW) or (FF) button.
   - Photo information is automatically set. The colour information extracted from a photo file may be different from your expectations. You can change the colour and preference.
   - PTP does not support folder sort mode.

❑ Basic View

Shows the folders on the USB memory device. If you select a folder and press the **ENTER** button, only the photo files contained in the selected folder are displayed.

- When sorted according to the **Basic View**, you cannot set Favourites files.

❑ Timeline

Sorts photos by date. It sorts by year and month from the earliest photo.

❑ Colour → Red / Yellow / Green / Blue / Magenta / Black / Gray / Unclassified

Sorts photos by colour. You can change the photo colour information.

- You should set the **Use Colour View** to on in the **Setup** menu before sorting photos by colour.

❑ Folder

Sorts photos by folder. If there are many folders in USB, the photos files are shown in order in each folder. The photo file in the Root folder is shown first and the others are shown in alphabetical order by name.

❑ Preference → ★★★ / ★★★ / ★★★ / ★★★

Sorts photos by preference (Favourites). You can change the photo preferences.

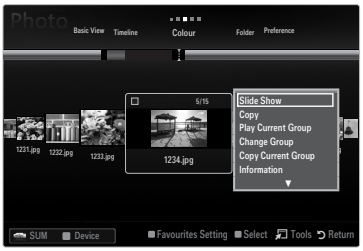
- **Changing the Favourites Setting**
  Select the desired photo in the File List Section, then press the Green button repeatedly until the desired setting appears.
- Up to 3 stars can be selected.
- The stars are for grouping purposes only. For example, the 3 star setting does not have any priority over the one star setting.

Photo List Option Menu

1. Press the **MEDIA.P** button.
2. Press the ◄ or ► button to select **Photo**, then press the **ENTER** button.
3. Press the ◄ or ► button to select the desired photo file.
   - Selecting Multiple Photos
     - Press the ◄ or ► button to select the desired photo file. Then press the Yellow button.
     - Repeat the above operation to select multiple photo files.
     - The mark ✓ appears to the selected photo file.
4. Press the **TOOLS** button.
   - The option menu changes according to the current status.

❑ Slide Show

Using this menu, you can play a SlideShow using the photo files on the USB memory device.



❑ Copy / Copy Current Group / Copy the selected file (When multiple files are selected)

Select a photo you want to copy. (Alternatively, select multiple files by pressing the Yellow button.) Press the **TOOLS** button to select **Copy** (or **Copy Current Group** / **Copy the selected file**). The files on the USB device are saved to the TV memory.

- You can only copy the files saved on the USB device.
- When the TV memory is full, files cannot be copied.

❑ Delete / Delete All / Delete Selected File (When multiple files are selected)

Select a photo to delete. (Alternatively, select multiple files by pressing the Yellow button.) Press the **TOOLS** button to select **Delete** (or **Delete All** / **Delete Selected File**). The files are deleted.

- You can only delete the files saved in the TV memory.
- You cannot recover a deleted file.

❑ Play Current Group

Using this menu, you can play a SlideShow using only the photo files in the currently selected sorting group.

❑ Change Group (When the Sort key is the Colour)

You can change a selected photo file's (or group of files) colour information in order to move it from one colour group to another.

- This does not change the actual colour of the photo.
- The group information of the current file is updated and the photos are moved to the new colour group.
- To change the information of multiple files, select the files you want by pressing the Yellow button.

❑ Deselect All (When at least one file is selected)

You can deselect all files.

- The ✓ mark indicating the corresponding file is selected is hidden.

❑ Information

The photo file information including the name, the size, the resolution, the date modified and the path is displayed.

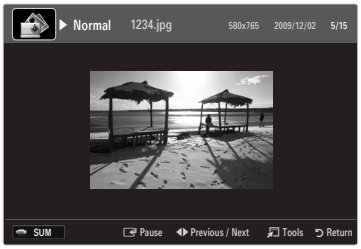
- You can view the information of photo files during a SlideShow using the same procedures.
- Press the **INFO** button to viewing the information.

❑ Remove Safely

You can remove the device safely from the TV.

Viewing a Photo or Slide Show

Viewing a Slide Show



1. Press the ▼ button to select the File List Section.
2. Press the **TOOLS** button.
3. Press the ▲ or ▼ button to select **Slide Show**, then press the **ENTER** button.
   All files in the File List Section will be used for the Slide Show.

During the slide show, files are displayed in order from the currently shown file.

The Slide Show progresses in the order sorted in the File List Section.

Music files can be automatically played during the Slide Show if the **Background Music** is set to **On**.

While a photo list is displayed, press the ► (Play)/**ENTER** button on the remote control to start slide show.

SlideShow Control Buttons

Button	Operations
ENTER	Play/Pause the Slide Show.
►	Play the Slide Show.
II	Pause the Slide Show.
■	Exit Slide Show and return to the photo list.
◄◄/►►	Change the SlideShow playing speed.
TOOLS	Run various functions from the Photo menus.

Playing current group

1. Press the ▲ button to move to the Sort key Section.
2. Press the ◄ or ► button to select a sorting standard.
3. Press the ▼ button to move to the Group List Section.
4. Select a group using the ◄ and ► buttons.
5. Press the ► (Play) button. A slideshow begins with the files of the selected group.

- **Alternatively**

1. Select a Sort key and then in the File List Section, select the photos contained in the desired group.
   To move to the previous/next group, press the ◄◄ (REW) or ►► (FF) button.
2. Press the **TOOLS** button.
3. Press the ▲ or ▼ button to select **Play Current Group**, then press the **ENTER** button.
   Only the photos in the sorting group including the selected files will be used for the Slide Show.

To perform a Slide Show with only the selected files

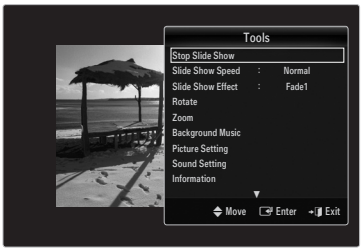
1. Press the ▼ button to select the File List Section.
2. Press the ◄ or ► button to select the desired photo in the File List Section.
3. Press the Yellow button.
4. Repeat the above operation to select multiple photos.
   The ✓ mark appears to the left of the selected photo.
   If you select one file, the Slide Show will not be performed.
   To deselect all selected files, press the **TOOLS** button and select **Deselect All**.
5. Press the ► (Play)/**ENTER** button.
   The selected files will be used for the Slide Show.

- **Alternatively**

1. In the File List Section, press the Yellow buttons to select the desired photos.
2. Press the **TOOLS** button.
3. Press the ▲ or ▼ button to select **Slide Show**, then press the **ENTER** button.
   The selected files will be used for the Slide Show.

Slide Show Option Menu

1. During a slide show (or when viewing a photo), press the **TOOLS** button to set the option.
2. Press the ▲ or ▼ button to select the desired option, then press the **ENTER** ↵ button.



❑ Stop Slide Show / Start Slide Show

You can start or stop a SlideShow.

❑ Slide Show Speed → Slow / Normal / Fast

You can select the slide show speed.

- This function is available only during a slide show.
- You can also change the speed of the Slide Show by pressing the ◄◄ (REW) or ►► (FF) button during the Slide Show.

❑ Slide Show Effect

You can select the screen transition effect used in the slideshow.

- **None / Fade1 / Fade2 / Blind / Spiral / Checker / Linear / Stairs / Wipe / Random**
  - This function is available only during a slide show.

❑ Rotate

You can rotate photos saved on a USB memory device.

- Whenever you press the ◄ button, it rotates by 270˚, 180˚, 90˚, and 0˚.
- Whenever you press the ► button, it rotates by 90˚, 180˚, 270˚, and 0˚.
- The rotated file is not saved.

❑ Zoom

You can magnify photos saved on a USB memory device. (x1 → x2 → x4)

- To move the enlarged photo image, press the **ENTER** ↵ button, then press the ▲/▼/◄/► buttons. Note that when the enlarged picture is smaller than the original screen size, the location change function doesn't work.
- The enlarged file is not saved.

❑ Background Music

You can select background music when watching a Slide Show.

- To use this feature, there must be music and photo files stored on the USB device.
- Loading music files is needed to change BGM mode. Play music files in music category to load.

- **Background Music → Off / On**
  - **Off**: Background music is not played.
  - **On**: When the background music is available, if you select **On**, the music is played back.
- **BGM Mode → Mood / Selected File / Shuffle**

  You can select a mode to use for the background music.
- **BGM Mood → Energetic / Rhythmical / Sad / Exciting / Calm / Unclassified**

  Music with the mood you selected is set as the background music.
  - If you set **BGM Mode** to **Mood**, you can select a mood.
- **Select Music File (0 File(s) Selected)**

  Only the selected music file is set as the background music.
  - If you set **BGM Mode** to **Selected File**, you can select a music file.

❑ Picture Setting / Sound Setting

You can select the picture and sound settings.

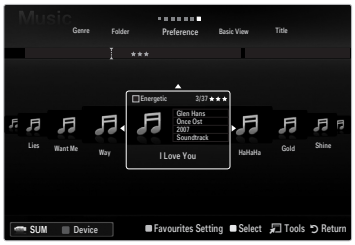
❑ Information

The photo file information is displayed.

❑ Remove Safely

You can remove the device safely from the TV.

Sorting the Music List



You can sort music files in the Music List by a particular standard.

1. Press the **MEDIA.P** button.
2. Press the ◄ or ► button to select **Music**, then press the **ENTER** button.
3. Press the ▲ button to move to the Sort key Section.
4. Press the ◄ or ► button to select a sorting standard. (**Basic View, Title, Artist, Mood, Genre, Folder, Preference**)
   - The Music files are sorted according to the newly selected sorting standard.
5. Press the ▼ button to move to the File List Section. Press the **ENTER** button to start playing music in the order selected by the user.
   - To move to the previous/next group, press the (REW) or (FF) button.
   - Music information is automatically set. The mood information extracted from a music file may differ from the expectations of the user. You can change the mood and preference.
   - If there is no title information for a music file, the filename is displayed.
   - If no information is available for the Artist, Album, Year, or Genre the corresponding item is displayed as blank.

❑ Basic View

Shows the folders of the USB memory device. If you select a folder and press the **ENTER** button, only the music files contained in the selected folder are displayed.

- When sorted according to the **Basic View**, you cannot set Favourites files.

❑ Title

Sorts the music titles in symbol/number/alphabet/special order, and shows the music file.

❑ Artist

Sorts the music file by artist in symbol/number/alphabet/special order.

❑ Mood → Energetic / Rhythmical / Sad / Exciting / Calm / Unclassified

Sorts music files by the mood. You can change the music mood information.

❑ Genre

Sorts music files by the genre.

❑ Folder

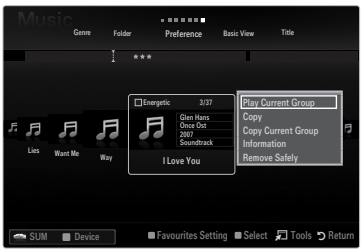
It sorts music files by the folder. If there are many folders in USB, the files are shown in order in each folder. The music file in the Root folder is shown first and the others are shown in alphabetical order by name.

❑ Preference → ☆☆☆ / ☆☆★ / ☆★★ / ★★★

Sorts music files by preference (Favourites). You can change the music files preferences.

- Changing the Favourites Setting
  Select the desired music file in the File List Section, then press the Green button repeatedly until the desired setting appears.
- Up to 3 stars can be selected.
- The stars are for grouping purposes only. For example, the 3 star setting does not have any priority over the one star setting.

Music List Option Menu



1. Press the **MEDIA.P** button.
2. Press the ◄ or ► button to select **Music**, then press the **ENTER** button.
3. Press the ◄ or ► button to select the desired Music file.
   - Selecting Multiple Music Files
     – Press the ◄ or ► button to select the desired music file. Then press the Yellow button.
     – Repeat the above operation to select multiple music files.
     – The mark ✓ appears to the selected music file.
4. Press the **TOOLS** button.
   - The option menu changes according to the current status.

❑ Play Current Group

Using this menu, you can only play music files in the currently selected sorting group.

❑ Copy / Copy Current Group / Copy the selected file (When multiple files are selected)

Select the music to copy. (Alternatively, select multiple files by pressing the Yellow button.) Press the **TOOLS** button to select **Copy** (or **Copy Current Group** / **Copy the selected file**). The files on the USB device are saved to the TV memory.

- You can only copy the files saved on the USB device.
- When the TV memory is full, files cannot be copied.

❑ Delete / Delete All / Delete Selected File (When multiple files are selected)

Select the file to delete. (Alternatively, select multiple files by pressing the Yellow button.) Press the **TOOLS** button to select **Delete** (or **Delete All** / **Delete Selected File**). The files are deleted.

- You can only delete the files saved in the TV memory.
- You cannot recover a deleted file.

❑ Change Group (When the Sort key is Mood)

You can change the mood information of music files.

The group information of the current file is updated and the file is moved to the new group.

- To change the information of multiple files, select files by pressing the yellow button.

❑ Deselect All (When at least one file is selected)

You can deselect all files.

- The ✓ mark indicating the corresponding file is selected is hidden.

❑ Information

The music file information including the name, the size, the date modified and the path is displayed.

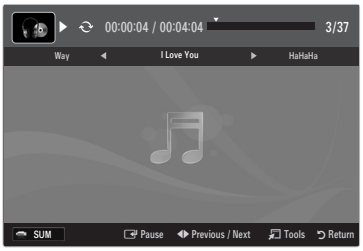
- You can view the music file information during **Play Current Group** using the same procedures.
- Press the **INFO** button to viewing the information.

❑ Remove Safely

You can remove the device safely from the TV.

Playing a Music

Playing a music file



1. Press the ▼ button to select the File List Section.
2. Press the ◄ or ► button to select a music file to be played.
3. Press the ▶ (Play)/**ENTER** button.
   - This menu only shows files with the MP3 file extension. Files with other file extensions are not displayed, even if they are saved on the same USB device.
   - The selected file is displayed at the top with its playing time.
   - To adjust the music volume, press the volume button on the remote control. To mute the sound, press the **MUTE** button on the remote control.
   - If the sound is odd when playing MP3 files, adjust the **Equalizer** and **SRS TruSurround HD** in the Sound menu. (An over-modulated MP3 file may cause a sound problem.)
   - The playing duration of a music file may be displayed as '00:00:00' if its playing time information is not found at the start of the file.
   - ◀◀ (REW) or ▶▶ (FF) buttons do not function during play.

Music Play Control Buttons

Button	Operations
ENTER	Play/Pause the music file.
▶	Play the music file
❚❚	Pause the music file
■	Exit play mode and return to the music list.
TOOLS	Run various functions from the Music menus.

Music function information icon

	When all music files in the folder (or the selected file) are repeated. **Repeat Mode** is **On**.
	When all music files in the folder (or the selected file) are played once. **Repeat Mode** is **Off**.

Playing the music group

1. Press the ▲ button to move to the Sort key Section.
2. Press the ◄ or ► button to select a sorting standard.
3. Press the ▼ or **ENTER** button to move to the Group List Section.
4. Press the ► (Play) button. The files of the selected group will start playing.

- **Alternatively**

1. Select a sort key and then in the File List Section, select the files contained in the desired group.
   To move to the previous/next group, press the ◄◄ (REW) or ►► (FF) button.
2. Press the **TOOLS** button.
3. Press the ▲ or ▼ button to select **Play Current Group**, then press the **ENTER** button.
   The music files in the sorting group including the selected file are played.

Playing the selected music files

1. Press the ▼ button to select the File List Section.
2. Press the ◄ or ► button to select the desired music file.
3. Repeat the above operation to select multiple music files.
   The ✓ appears to the left of the selected music file.
   To deselect all selected files, press the **TOOLS** button and select **Deselect All**.
4. Press the ► (Play)/**ENTER** button.
   The selected files will be played.

Music Play option Menu

Music Play Option Menu

❑ **Repeat Mode → On / Off**
You can play music files repeatedly.

❑ **Picture Setting / Sound Setting**
You can configure the picture and sound settings.

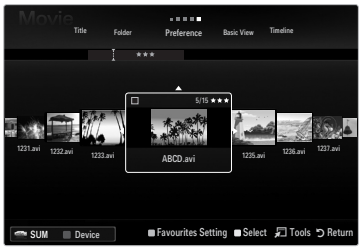
❑ **Information**
The music file information is displayed.

❑ **Remove Safely**
You can remove the device safely from the TV.

Sorting the Movie List

You can sort movies in the Movie List by a particular standard.

1. Press the **MEDIA.P** button.
2. Press the ◄ or ► button to select **Movie**, then press the **ENTER** button.
3. Press the ▲ button to move to the Sort key Section.
4. Press the ◄ or ► button to select a sorting standard. (**Basic View, Timeline, Title, Folder, Preference**)
   The movie files are sorted according to the newly selected sorting standard.
5. Press the ► (Play)/**ENTER** button to play the movie in the order selected by the user.
   Movie information is automatically set. You can change the preference.



❑ Basic View

Shows the folders of the USB memory device. If you select a folder and press the **ENTER** button, only the movie files contained in the selected folder are displayed.

✎ When sorted according to the **Basic View**, you cannot set Favourites files.

❑ Timeline

Sorts movies by date. It sorts by year and month from the earliest movie.

❑ Title

Sorts and displays the movie titles in symbol/number/alphabet/special order.

❑ Folder

If there are many folders in USB, the movies files are shown in order in each folder. The movie file in the Root folder is shown first and the others are shown in alphabetical order by name.

❑ Preference → ★☆☆ / ★★☆ / ★★★ / ★★★

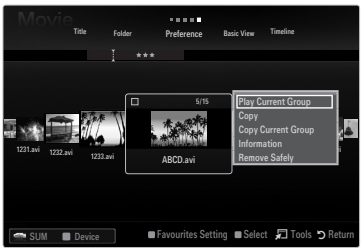
Sorts movies by preference. (Favourites) You can change the movie preferences.

✎ **Changing the Favourites Setting**
Select the desired movie file in the File List Section, then press the Green button repeatedly until the desired setting appears.

✎ Up to 3 stars can be selected.

✎ The stars are for grouping purposes only. For example, the 3 star setting does not have any priority over the one star setting.

Movie List Option Menu



1. Press the **MEDIA.P** button.
2. Press the ◄ or ► button to select **Movie**, then press the **ENTER** button.
3. Press the ◄ or ► button to select the desired Movie file.
   ✎ Selecting Multiple Movie Files
   – Press the ◄ or ► button to select the desired movie file. Then press the yellow button.
   – Repeat the above operation to select multiple movie files.
   – The mark ✓ appears to the selected movie file.
4. Press the **TOOLS** button.
   ✎ The option menu changes according to the current status.

❑ Play Current Group

Using this menu, you can only play movie files in the currently selected sorting group.

❑ Copy / Copy Current Group / Copy the selected file (When multiple files are selected)

Select the movie to copy. (Alternatively, select multiple files by pressing the Yellow button.) Press the **TOOLS** button to select **Copy** (or **Copy Current Group / Copy the selected file**). The files on the USB device are saved to the TV memory.

✎ You can only copy the files saved on the USB device.

✎ When the TV memory is full, files cannot be copied.

❑ Delete / Delete All / Delete Selected File (When multiple files are selected)

Select the file to delete. (Alternatively, select multiple files by pressing the Yellow button.) Press the **TOOLS** button to select **Delete** (or **Delete All / Delete Selected File**). The files are deleted.

✎ You can only delete the files saved in the TV memory.

✎ You cannot recover a deleted file.

❑ Deselect All (When at least one file is selected)

You can deselect all files.

✎ The ✓ mark indicating the corresponding file is selected is hidden.

❑ Information

The movie file information including the name, the size, the date modified and the path is displayed.

✎ Press the **INFO** button to viewing the information.

❑ Remove Safely

You can remove the device safely from the TV.

Playing a Movie File

Playing a movie file

1. Press the ▼ button to select the File List Section.
2. Pressing the ◄ or ► button to select a movie file to be played.
3. Press the ► (Play)/**ENTER** button.
   - The selected file is played.
   - The selected file is displayed at the top with its playing time.
   - The playing duration of a movie file may be displayed as '00:00:00' if its playing time information is not found at the start of the file.
   - You can watch exciting gaming multimedia files, but the gaming function is not supported.

Supported Video Formats

File Extension	Container	Video Decoder	Support Resolution
			Chelsea
*.avi	AVI	Divx 3.11/4.x/5.1/6.0	720x576
		XviD	1920x1080
		H.264 BP/MP/HP	
		MPEG-4 SP	
		MPEG-4 ASP	
		Motion JPEG	800x600
*.mkv	MKV	Divx 3.11/4.x/5.1/6.0	720x576
		XviD	1920x1080
		H.264 BP/MP/HP	
		MPEG-4 SP	
		MPEG-4 ASP	
		Motion JPEG	800x600
*.asf	ASF	Divx 3.11/4.x/5.1/6.0	720x576
		XviD	1920x1080
		H.264 BP/MP/HP	
		MPEG-4 SP	
		MPEG-4 ASP	
*.wmv (VC1)		Window Media Video v9	
*.mp4	MP4 (SMP4)	H.264 BP/MP/HP	1920x1080
		MPEG-4 SP	
		MPEG-4 ASP	
		XVID	
*.3gp	3GPP	H.264 BP/MP/HP	1920x1080
		MPEG-4 SP	
		MPEG-4 ASP	
*.mpg *.mpeg *.vro *.vob (ps)	PS	MPEG1 (Programme Stream)	1920x1080
		MPEG2 (Programme Stream)	
others (ts)		MPEG2 (Transport Stream)	1920x1080
		H.264 (Transport Stream)	
		VC1 (Transport Stream)	

Video Play Control Buttons

Button	Operations
ENTER	Play/Pause the movie file
►	Play the movie file
II	Pause the movie file
TOOLS	Run various functions from the Movie menus.
■	Exit play mode and return to the movie list.
◄ / ►	Skip forwards or backwards through the movie file.
▲ / ▼	Move to the first/last of the file.
►►	Play the file at double speed. This function may not be supported depending on the codec.

Playing the movie group

1. Press the ▲ button to move to the Sort key Section.
2. Press the ◄ or ► button to select a sorting standard.
3. Press the ▼ or **ENTER** button to move to the Group List Section.
4. Press the ► (Play) button. Only the files of the selected group will start playing.

- **Alternatively**

1. Select a Sort key and then in the File List Section, select the files contained in the desired group.
   To move to the previous/next group, press the ◄◄ (REW) or ►► (FF) button.
2. Press the **TOOLS** button.
3. Press the ▲ or ▼ button to select **Play Current Group**, then press the **ENTER** button.
   The movie files in the sorting group including the selected file are played.

Playing the selected movie files

1. Press the ▼ button to select the File List Section.
2. Press the ◄ or ► button to select the desired movie file.
3. Press the Yellow button.
   The ✓ mark appears to the left of the selected movie file.
4. Repeat the above operation to select multiple movie files.
5. Press the ► (Play)/**ENTER** button.
   Only the selected file is played.

Playing movie continuously (Resume Play)

If you exit playing movie function, the movie can be played later from the point where it was stopped.

1. Select the movie file you want to play continuously by pressing ◄ or ► button to select it from the File List Section.
2. Press the ► (Play)/**ENTER** button.
3. Select play continuously (Resume Play) by pressing the Blue button.
   The Movie will begin to play from where it was stopped .
   If **Cont. movie play help** function was set **On** in the Setup menu, a pop-up message will appear when you resume play a movie file.

Movie Play Option Menu

Movie Play Option Menu

❑ **Picture Setting / Sound Setting**

You can configure the picture and sound settings.

❑ **Picture Size**

- **Fit**

  Play video at the TV screen size.

- **Original**

  Play video at the original size.

❑ Caption Setting

You can set the captions for the movie.

- **Caption → On / Off**

  You can turn the captions for the movie on or off.

- **Caption Language (New Zealand, Singapore only)**

  You can select the language of the captions.

- **Caption Size → Small / Standard / Large**

  You can change the font size of the captions.

- **Caption Sync.**

  You can adjust the caption sync.

- **Caption Sync Reset**

  You can reset the adjusted caption sync.

❑ Information

The movie file information is displayed.

❑ Remove Safely

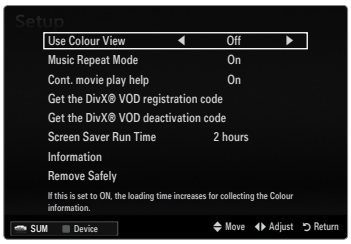
You can remove the device safely from the TV.

Using the Setup Menu

Setup displays the user settings of the **Media Play** menu.

1. Press the **MEDIA.P** button.
2. Press the ◄ or ► button to select **Setup**, then press the **ENTER** ↵ button.
3. Press the ▲ or ▼ button to select the desired option.
4. Press the ◄ or ► button to select the option, then press the **ENTER** ↵ button.

✎ To exit **Media Play** mode, press the **MEDIA.P** button on the remote control.



❑ Use Colour View → On / Off

You can select sorting photos by colour. If this option is set to **On**, the loading time may be increased to collect colour information from the photos.

❑ Music Repeat Mode → On / Off

Select to repeatedly play music files.

❑ Cont. movie play help → On / Off

Select to display the help pop-up message for continuous movie playback.

❑ Get the DivX® VOD registration code

Shows the registration code authorized for the TV. If you connect to the DivX web site and register the registration code with a personal account, you can download VOD registration file.

If you play the VOD registration using **Media Play**, the registration is completed.

✎ For more information on DivX® VOD, visit www.DivX.com.

❑ Get the DivX® VOD deactivation code

When DivX(R) VOD is not registered, the registration deactivation code is displayed.

If you execute this function when DivX® VOD is registered, the current DivX® VOD registration is deactivated.

❑ Screen Saver Run Time → 2 hours / 4 hours / 8 hours

Select to set the waiting time before the screen saver appears.

❑ Information

Select to viewing the information of the connected device.

❑ Remove Safely

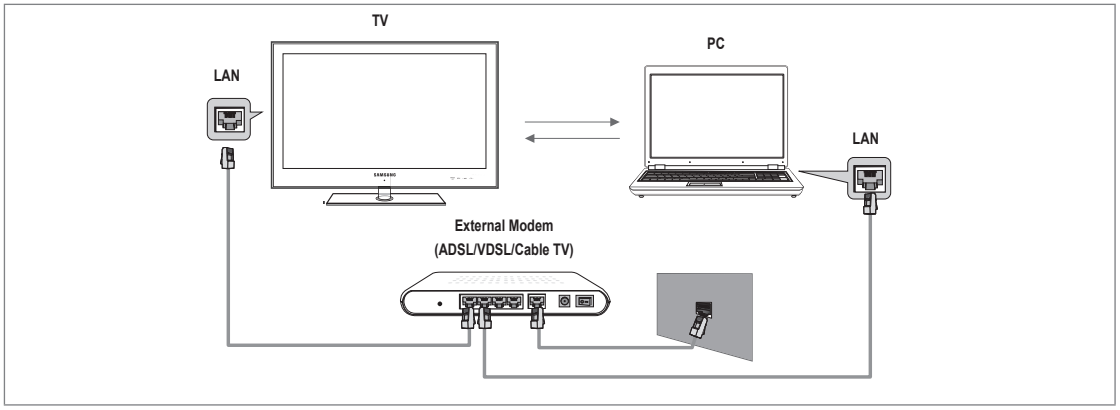
You can remove the device safely from the TV.

MEDIA PLAY-DLNA

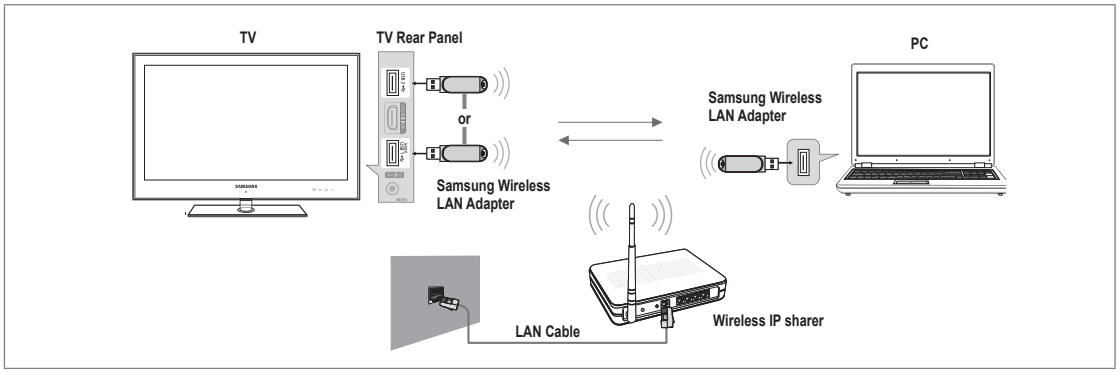
Setting the DLNA Network

DLNA allows you to watch pictures, musics and videos saved on your PC on your TV through a network connection in Media Play mode. This removes the need to copy them to a USB storage device and then connect the device to your TV. To use DLNA, the TV must be connected to the network and the DLNA application must be installed on your PC.

Network Connection Diagram-Cable



Network Connection Diagram-Wireless



1. For more information on how to configure your network, refer to pages 24~29.
   - You are recommended to locate both TV and PC in same subnet. The first 3 parts of the subnet address of the TV and the PC IP addresses should be the same and only the last part (the host address) should be changed. (e.g. IP Address: 123.456.789.**)
2. Connect the PC to which the **Samsung PC Share Manager** programme will be installed and the external modem using a LAN cable.
   - You can connect the TV to the PC directly without connecting it through a Sharer (Router).

Installing the DLNA Application

To play content on the PC on the TV, you have to first install the application. To use the DLNA function smoothly, use the programme in the CD-ROM supplied with the TV or use the Samsung PC Share Manager programme corresponding to the TV model that can be downloaded from the Samsung web site.

System Requirements

1. Insert the Programme CD supplied with this TV into your PC.
2. 30MB of free hard disk space is needed for the programme installation.
   - If you share files, up to 30MB of hard disk drive space is required for each 100 files.
   - If you cancel file sharing, the hard disk drive space used for the thumbnail information is also freed.

Supported Formats

- Image: JPEG/ Audio: MP3/ Video: AVI, MKV, ASF, MP4, 3GPP, PS, TS container. For detailed supported video formats, refer to page 42.

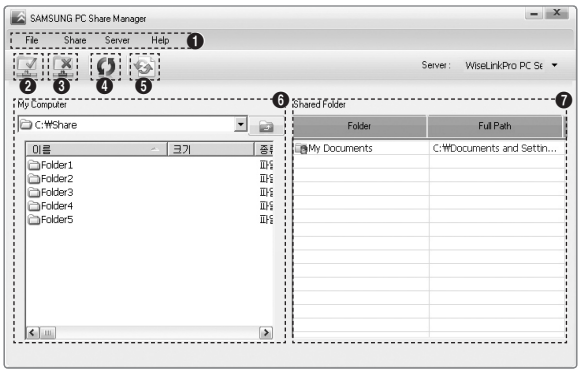
Install the application

SAMSUNG PC Share Manager – InstallShield Wizard
Welcome to the InstallShield Wizard for SAMSUNG PC Share Manager
SAMSUNG PC Share Manager – InstallShield Wizard
Choose Destination Location
SAMSUNG PC Share Manager – InstallShield Wizard
Ready to Install the Program
SAMSUNG PC Share Manager – InstallShield Wizard
InstallShield Wizard Complete

1. Run the Setup.exe file on the Programme CD supplied with the product.
   Alternatively, you can download the file from www.samsung.com.
2. Install the SAMSUNG PC Share Manager as shown in the figures below.
3. When the installation is complete, the PC Share Manager icon appears on your Desktop.
   Double-click the icon to run the programme.

Using the DLNA Application

The Programme Screen Layout



1. Menus: The following application menus are provided : **File, Share, Server**, and **Help**.
2. Click to share the selected PC server folder.
3. Click to cancel sharing.
4. Click to refresh the PC folder and files.
5. Click to synchronize the share status.
6. The folders and files of the PC to be shared are listed.
7. Folders shared by the user are listed.

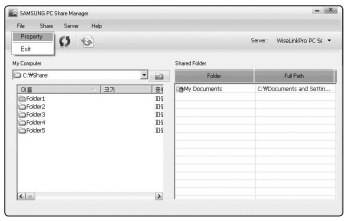
❑ File

■ Property

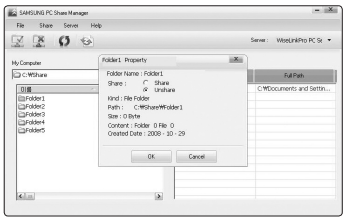
Shows information on the selected file or folder.

- Method 1: Select a file or folder and select the **File** menu and then select the **Property** sub-menu.
- Method 2: Select a file or folder, right-click over the selected file or folder and then select **Property** from the pop-up menu.

<Method 1>



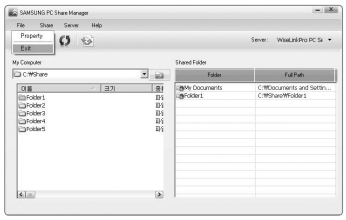
<Method 2>



■ Exit

Exits the DLNA application.

If you select **Exit** without applying the changes after changing the shared status, a message will appear asking if you want to apply the changed settings to the PC. Select **Yes** to apply the changes and exit the application.



❑ Share

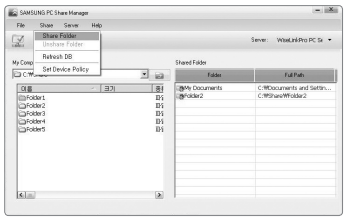
■ Sharing a Folder

You can share a folder from your PC to the TV. The maximum number of folders that can be shared is 32.

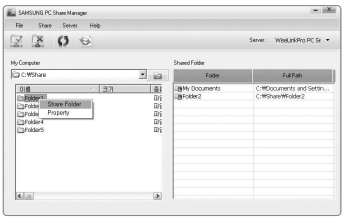
✎ Your PC will operate as a server to the TV.

- Method 1: Select a folder in **My Computer**, select the **Share** menu and then select the **Share Folder** sub-menu.
- Method 2: Select a folder in **My Computer**, right-click over the selected folder and then select **Share Folder** from the popup menu.
- Method 3: Locate the mouse pointer over a folder in the **My Computer** folder list in the left pane and drag&drop the folder into the Shared Folders pane. If a message appears asking you to confirm the shared folder, select **Yes**.

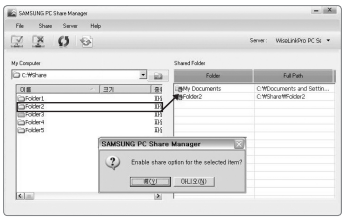
<Method 1>



<Method 2>



<Method 3>

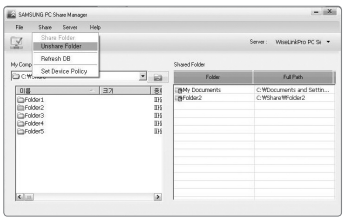


■ Cancelling a Shared Folder

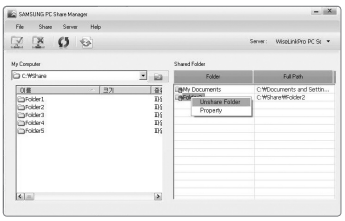
You can cancel a shared folder on your PC. Select a folder from the **Shared Folder** pane and select **Unshare Folder**.

- Method 1: Select a folder from the **Shared Folder** pane, select the **Share** menu and then select **Unshare Folder**.
- Method 2: Select a folder from the **Shared Folder** pane, right-click over the selected folder and then select **Unshare Folder** from the pop-up menu.
- Method 3: Locate the mouse pointer over a folder in the **Shared Folder** pane and drag&drop the folder into the **My Computer** pane. If a message appears asking you to confirm the cancelation, select **Yes**.

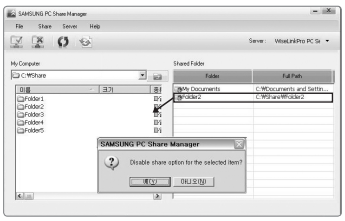
<Method 1>



<Method 2>



<Method 3>



■ **Applying the Current Settings**

Perform this when synchronization is necessary due to a new shared folder or cancelling a shared folder. The **Set Changed State** menu applies changes to shared folders to the data saved with the PC share programme.

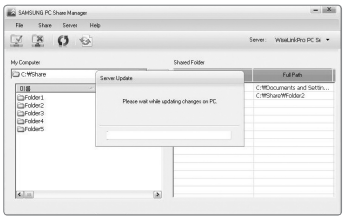
Since applying changes to the internal data is a time-consuming process, this function enables users to apply changes to the data only when required.

Until the **Set Changed State** menu is selected, the changed state of the shared folder is not applied to the server.

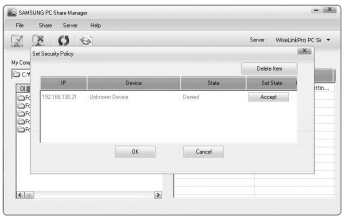
Changes to the shared folders are not applied to your PC until you select the **Set Changed State** menu.

- Method 1: Select the **Share** menu and select the Refresh DB sub-menu.
- Method 2: Click the **Set Changed State** icon.

<Method 1>



<Method 2>



■ **Setting the Access Permission**

To enable the TV to find your PC, the TV must be set to **Set Device Policy** in the Access Permission Settings window. In addition, the PC server and the TV must be on the same subnet.

- Method: Select the **Share** menu and select **Set Device Policy**. Rejected items are represented in gray. You can change the access permissions by using the Allow **Accept** / **Deny** button. To delete an item, select the item and select **Delete Item**.

❑ Server

■ **Server**

You can run or stop using your PC as a server.

■ **Run DLNA Digital Media Server when Windows Starts**

You can determine whether to start the PC server automatically when Windows starts.

■ **Change server name**

You can rename the PC server. Enter a new name and click **OK**. The new name will appear at the top right of the window and will appear on the TV.

❑ Help

■ **Version**

The programme version information message box appears.

Using the DLNA Function

Using the DLNA Menu

DLNA (Digital Living Network Alliance) enables content saved on a DLNA server (usually your PC) connected to your TV or over a network to be played. Media Play enables playing content saved on a USB memory device connected to the TV, while DLNA enables playing content saved on a DLNA server (your PC) connected to your TV or over the network. The procedures to use the content are the same as those for **Media Play (USB & DLNA)**.

- If you install the PC share manager programme supplied with the TV onto a PC, you can have the PC perform the role of a DLNA server over the network.
- For detailed procedures on using the DLNA menu, refer to pages 46~48.

1. Press the **MEDIA.P** button on the remote control to display the **DLNA** menu.
2. Press the ◄ or ► button to select an icon (**Photo, Music, Movie, Setup**), then press the **ENTER** button.
   - To exit **DLNA** mode, press the **MEDIA.P** button on the remote control.
   - DLNA does not support the following functions.
     - The Background Music and Background Music Setting functions.
     - Sorting files by preference in the Photo, Music, and Movie folders.
     - The Change Group Info function.
     - The Copy / Delete function.
     - The Remove Safely function.
     - The REW/FF (◄◄/►►) key functions while a movie is playing.
     - Playing Movie Continuously (Resume Play) function.
   - The Skip function may not work with some container such as asf and mkv.
   - The Divx DRM, Multi-audio, embedded caption does not supported.
   - Samsung PC Share manager should be permitted by the firewall programme on your PC.
   - The Skip (◄/► keys) or Pause function may not work while a movie is playing for the DLNA of other manufacturers, depending on the corresponding content information.
   - The playing time may not be displayed while a movie is playing.

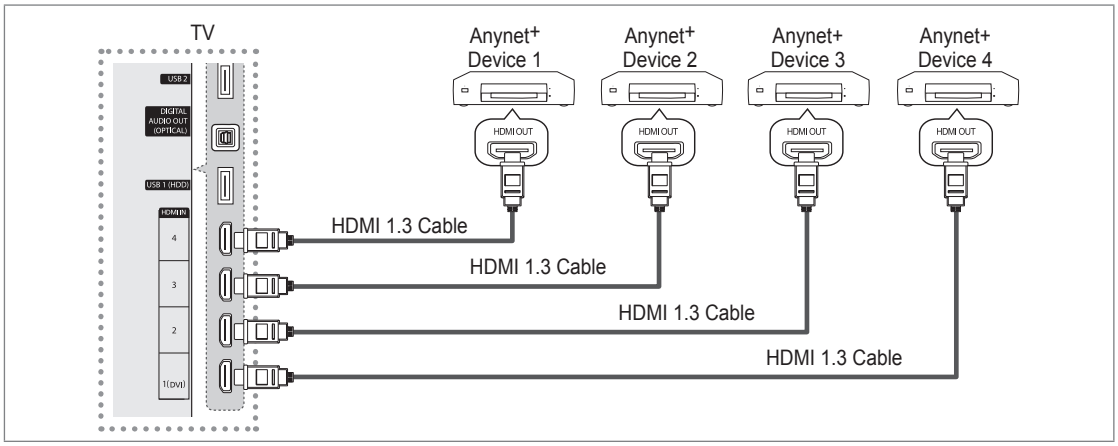
ANYNET+

Connecting Anynet+ Devices

What is Anynet+?

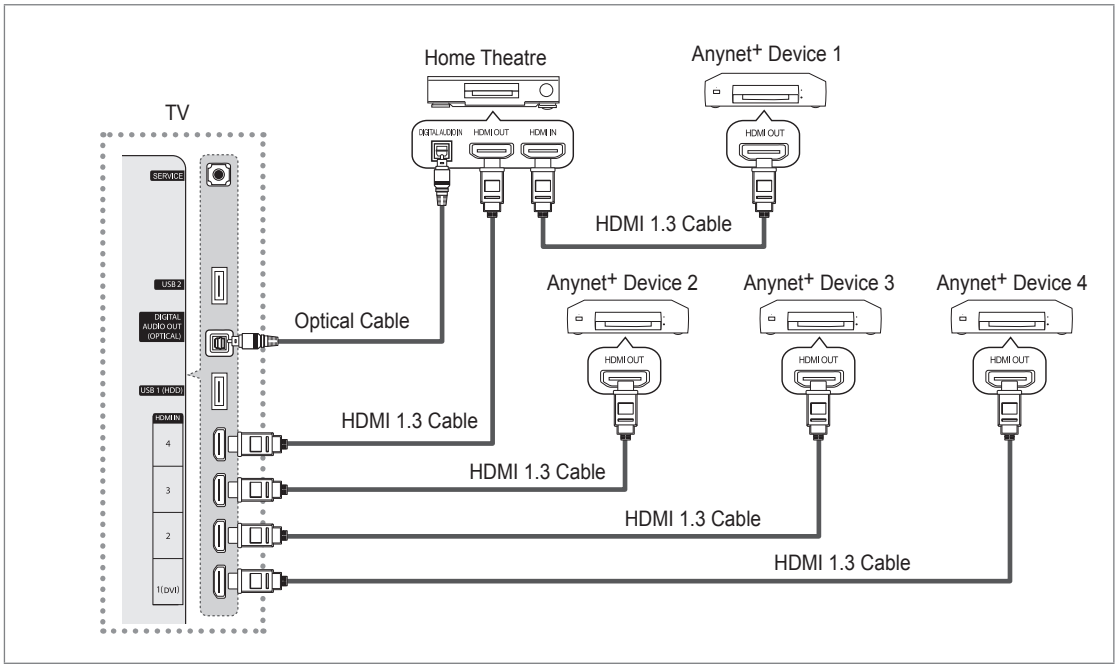
Anynet+ is a function that enables you to control all connected Samsung devices that support Anynet+ with your Samsung TV's remote. The Anynet+ system can be used only with Samsung devices that have the Anynet+ feature. To be sure your Samsung device has this feature, check if there is an Anynet+ logo on it.

To connect to a TV



1. Connect the **HDMI IN (1 (DVI), 2, 3**or **4)** jack on the TV and the HDMI OUT jack of the corresponding Anynet+ device using an HDMI cable.

To connect to Home Theatre

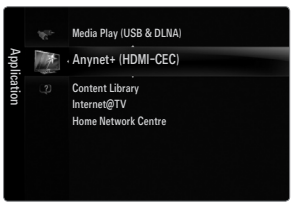


1. Connect the **HDMI IN (1(DVI), 2, 3** or **4)** jack on the TV and the HDMI OUT jack of the corresponding Anynet+ device using an **HDMI** cable.
2. Connect the HDMI IN jack of the home theatre and the HDMI OUT jack of the corresponding Anynet+ device using an HDMI cable.

- Connect the Optical cable between the **DIGITAL AUDIO OUT (OPTICAL)** jack on your TV and the Digital Audio Input on the Home Theatre.
- When following the connection above, the Optical jack only outputs 2 channel audio. You will only hear sound from the Home Theatre's Front Left and Right speakers and the subwoofer. If you want to hear 5.1 channel audio, connect the **DIGITAL AUDIO OUT (OPTICAL)** jack on the DVD / Satellite Box (ie Anynet Device 1 or 2) directly to the Amplifier or Home Theatre, not the TV.
- Connect only one Home Theatre.
- You can connect an Anynet+ device using the HDMI 1.3 cable. Some HDMI cables may not support Anynet+ functions.
- Anynet+ works when the AV device supporting Anynet+ is in the Standby or On status.
- Anynet+ supports up to 12 AV devices in total. Note that you can connect up to 3 devices of the same type.

Setting Up Anynet+

Press the **TOOLS** button to display the **Tools** menu. You can also display Anynet+ menu by selecting **Tools** → **Anynet+ (HDMI-CEC)**.

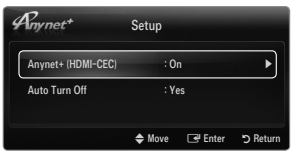


❑ Setup

■ **Anynet+ (HDMI-CEC) → Off / On**

To use the Anynet+ Function, **Anynet+ (HDMI-CEC)** must be set to **On**.

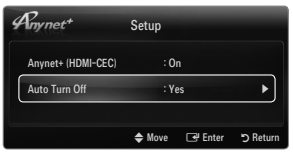
- When the **Anynet+ (HDMI-CEC)** function is disabled, all the Anynet+ related operations are deactivated.



■ **Auto Turn Off → No / Yes**

Setting an Anynet+ Device to turn Off automatically when the TV is Turned Off and setting a TV to turn off automatically when a HDMI-CEC device requestes tv to turn off.

- The active source on the TV remote must be set to TV to use the Anynet+ function.
- If you set **Auto Turn Off** to **Yes**, connected external devices are also turned off when the TV is turned off. If an external device is still recording, it may or may not turn off.



Switching between Anynet+ Devices

1. Press the **TOOLS** button. Press the **ENTER** button to select **Anynet+ (HDMI-CEC)**.
2. Press the ▲ or ▼ button to select **Device List**, then press the **ENTER** button.
   - Anynet+ devices connected to the TV are listed.
   - If you cannot find a device you want, press the red button to scan for devices.
3. Press the ▲ or ▼ button to select a particular device and press the **ENTER** button. It is switched to the selected device.
   - Only when you set **Anynet+ (HDMI-CEC)** to **On** in the **Application** menu, the **Device List** menu appears.

- Switching to the selected devices may take up to 2 minutes. You cannot cancel the operation during the switching operation.
- The time required to scan for devices is determined by the number of connected devices.
- When the device scan is complete, the number of devices found are not displayed.
- Although the TV automatically searches the device list when the TV is turned on via the power button, devices connected to the TV may not always be automatically displayed in the device list. Press the red button to search for the connected device.
- If you have selected external input mode by pressing the **SOURCE** button, you cannot use the Anynet+ function. Make sure to switch to an Anynet+ device by using the **Device List**.

Anynet+ Menu

The Anynet+ menu changes depending on the type and status of the Anynet+ devices connected to the TV.

Anynet+ Menu	Description
View TV	Anynet+ mode changes to TV broadcast mode.
Device List	Shows the Anynet+ device list.
(device_name) **Menu**	Shows the connected device menus. E.g. If a DVD recorder is connected, the disc menu of the DVD recorder will appear.
(device_name) **INFO**	Shows the play menu of the connected device. E.g. If a DVD recorder is connected, the play menu of the DVD recorder will appear.
Recording: (*recorder)	Starts recording immediately using the recorder. (This is only available for devices that support the recording function.)
Stop Recording: (*recorder)	Stops recording.
Receiver	Sound is played through the receiver.

If more than one recording device is connected, they are displayed as (*recorder) and if only one recording device is connected, it will be represented as (*device_name).

TV Remote Control Buttons Available in Anynet+ Mode

Device Type	Operating Status	Available Buttons
Anynet+ Device	After switching to the device, when the menu of the corresponding device is displayed on the screen.	Numeric buttons ▲/▼/◄/►/wheel/ **ENTER** buttons Colour buttons / **EXIT** button
	After switching to the device, while playing a file	◄◄(Backward search) / ►►(Forward search) / ■(Stop) / ►(Play) / ❚❚(Pause)
Device with built-in Tuner	After switching to the device, when you are watching a TV programme	**P** ∨ / **P** ∧ button
Audio Device	When Receiver is activated	Volume / **MUTE** button

- The Anynet+ function only works when the active source on the TV remote control is set to TV.
- The ● button works only while in the recordable state.
- You cannot control Anynet+ devices using the buttons on the TV. You can control Anynet+ devices only using the TV remote control.
- The TV remote control may not work under certain conditions. If this occurs, reselect the Anynet+ device.
- The Anynet+ functions do not operate with other manufacturers' products.
- The ◄◄, ►► operations may differ depending on the device.

Recording

You can make a recording of a TV programme using a Samsung recorder.

1. Press the **TOOLS** button. Press the **ENTER** button to select **Anynet+ (HDMI-CEC)**.
2. Press the ▲ or ▼ button to select Recording Immediately and press the **ENTER** button. Recording begins.
   - When there is more than one recording device
     When multiple recording devices are connected, the recording devices are listed. Press the ▲ or ▼ button to select a recording device and press the **ENTER** button. Recording begins.
   - When the recording device is not displayed select **Device List** and press the red button to search devices
3. Press the **EXIT** button to exit.

- You can record the source streams by selecting **Recording**: (device_name).
- Pressing the ● button will record whatever you are currently watching. If you are watching video from another device, the video from the device is recorded.
- Before recording, check whether the antenna jack is properly connected to the recording device. To properly connect an antenna to a recording device, refer to the recording device's users manual.

Listening through a Receiver (Home theatre)

You can listen to sound through a receiver instead of the TV speaker.

1. Press the **TOOLS** button. Press the **ENTER** button to select **Anynet+ (HDMI-CEC)**.
2. Press the ▲ or ▼ button to select **Receiver**. Press the ◄ or ► button to select **On** or **Off**.
3. Press the **EXIT** button to exit.

- If your receiver supports audio only, it may not appear in the device list.
- The receiver will work when you have properly connected the optical in jack of the receiver to the **DIGITAL AUDIO OUT (OPTICAL)** jack of the TV.
- When the receiver (home theatre) is set to On, you can hear sound output from the TV's Optical jack. When the TV is displaying a DTV(air) signal, the TV will send out 5.1 channel sound to the Home theatre receiver. When the source is a digital component such as a DVD and is connected to the TV via HDMI, only 2 channel sound will be heard from the Home Theatre receiver.
- If there is a power interruption to the TV when the **Receiver** is set to **On** (by disconnecting the power cord or a power failure), the **Speaker Select** may be set to **External Speaker** when you turn the TV on again.

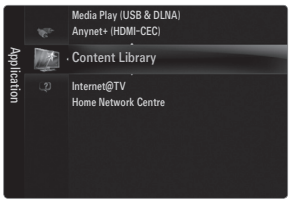
Troubleshooting for Anynet+

Problem	Possible Solution
Anynet+ does not work.	● Check if the device is an Anynet+ device. The Anynet+ system supports Anynet+ devices only. ● Connect only one receiver (home theatre). ● Check if the Anynet+ device power cord is properly connected. ● Check the Anynet+ device's Video/Audio/HDMI 1.3 cable connections. ● Check whether Anynet+ (HDMI-CEC) is set to On in the Anynet+ setup menu. ● Check whether the TV remote control is in TV mode. ● Check whether it is Anynet+ exclusive remote control. ● Anynet+ doesn't work in certain situations. (Searching channels, Operating **Media Play, Plug & Play**, etc.) ● When connecting or removing the HDMI 1.3 cable, please make sure to search devices again or turn your TV off and on again. ● Check if the Anynet+ Function of Anynet+ device is set on.
I want to start Anynet+.	● Check if the Anynet+ device is properly connected to the TV and check if the **Anynet+ (HDMI-CEC)** is set to **On** in the **Anynet+ Setup** menu. ● Press the TV button on the TV remote control to switch to TV. Then press the **TOOLS** button to show the Anynet+ menu and select a menu you want.
I want to exit Anynet+.	● Select View **TV** in the Anynet+ menu. ● Press the SOURCE button on the TV remote control and select a device other than Anynet+ devices. ● Press **P ∨/∧**, **CH LIST, PRE-CH**, and **FAV.CH** to change the TV mode. (Note that the channel button operates only when a tuner-embedded Anynet+ device is not connected.)
The message 'Connecting to Anynet+ device...' appears on the screen.	● You cannot use the remote control when you are configuring Anynet+ or switching to a view mode. ● Use the remote control when the Anynet+ setting or switching to view mode is complete.
The Anynet+ device does not play.	● You cannot use the play function when Plug & Play is in progress.
The connected device is not displayed.	● Check whether or not the device supports Anynet+ functions. ● Check whether or not the HDMI 1.3 cable is properly connected. ● Check whether **Anynet+ (HDMI-CEC)** is set to **On** in the Anynet+ setup menu. ● Search Anynet+ devices again. ● You can connect an Anynet+ device using the HDMI 1.3 cable only. Some HDMI cables may not support Anynet+ functions. ● If it is terminated by an abnormal situation such as disconnecting the HDMI cable or power cord or a power failure, please repeat the device scan.
The TV programme cannot be recorded.	● Check whether the antenna jack on the recording device is properly connected.
The TV sound is not output through the receiver.	● Connect the optical cable between TV and the receiver.

CONTENT LIBRARY

Using the Content Library

The Content Library allows you to enjoy various content on your TV. You can use the default content stored in the TV memory or you can enjoy new content using a USB device or via the Internet.



Using the Content Library Menu

1. Press the **MENU** button. Press the ▲ or ▼ button to select **Application**, then press the **ENTER** ↵ button.
2. Press the ▲ or ▼ button to select **Content Library**, then press the **ENTER** ↵ button.
   ✎ The **Content Library** main menu is displayed.
3. Press the ◄ or ► button to select an icon (**Gallery, Cooking, Game, Children, Wellness, Others, Content Management**), then press the **ENTER** ↵ button.

Using the Remote Control Button in Content Library Menu

Button	Operations
▲/▼/◄/►	Move the cursor and select an item.
ENTER ↵	Select the currently selected item.
RETURN	Return to the previous menu.
EXIT	Stop the current function and return to the **Content Library** main menu.
P	Stop **Content Library** mode and Returns to TV mode.
Colour button	Keys that provide functions are described on the corresponding page.
MUTE	You can control the volume of the played content.

CONTENTS LIBRARY CONTAINS TEXT, GRAPHICS, IMAGES, MULTIMEDIA, AND OTHER MATERIALS FOR INFORMATIONAL AND PROMOTIONAL PURPOSES ONLY. MATERIALS IN CONTENTS LIBRARY HAS BEEN MODIFIED AND KEEPS BEING REVISED AND UPDATED. THE MATERIALS IN THE CONTENTS LIBRARY MAY NOT BE SUITABLE FOR ALL AUDIENCES.
INFORMATION IN THE CONTENTS LIBRARY IS PROVIDED 'AS IS.' ALTHOUGH THE INFORMATION PROVIDED TO YOU IN THE CONTENTS LIBRARY IS OBTAINED OR COMPLIED FROM SOURCES WE BELIEVE TO BE RELIABLE, SAMSUNG CANNOT AND DOES NOT GUARANTEE THE ACCURACY, VALIDITY, TIMELINESS OR COMPLETENESS OF ANY INFORMATION OR DATA MADE AVAILABLE TO YOU FOR ANY PARTICULAR PURPOSE. UNDER NO CIRCUMSTANCES, INCLUDING NEGLIGENCE, SHALL SAMSUNG BE HELD LIABLE, WHETHER IN CONTRACT OR TORT, FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES, ATTORNEY FEES, EXPENSES, OR ANY OTHER DAMAGES WHATSOEVER ARISING OUT OF, OR IN CONNECTION WITH, ANY INFORMATION CONTAINED IN, OR THE USE OF, THE CONTENTS LIBRARY, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Using the TV Memory Contents

You can use enjoy content stored in the TV memory. You can add/delete content to/from the TV memory. To add/delete content, select **Content Management**.

✎ To return to **Content Library** main menu, press the **EXIT** button.

❑ Gallery

This function plays a SlideShow with high resolution images and background music and produces various atmospheres. Using the Gallery function of the TV, you can change your home atmosphere.

✎ The copyrights of the **Gallery** contents and all issues related to them are reserved by **TimeSpace, Inc.**

✎ Press the **ENTER** ↵ button to pause the SlideShow, and also press the **ENTER** ↵ button to resume the SlideShow.

✎ Press the **INFO** button to display information on the selected photo. (This is not displayed if the photo has no information.)

❑ Cooking

You can view various recipes and then easily follow them step by step. Enjoy these contents which will give you great ideas for meals.

- The recipes introduced in the **Cooking** contents on the Samsung TV are based on recipes published by **Anness Publishing**.
- The copyrights of the **Cooking** contents and all issues related to them are reserved by Practical Pictures.

❑ Game

This category provides entertainment games for the whole family.

- For the buttons used in the games, refer to the directions on the screen.
- Colour Buttons for Games

Button	Operations
Red	Press to move to the game home screen
Green	Press to pause the game
Yellow	Option Key
Blue	Press to exit the game

❑ Children

This is educational and interactive content that children can watch repeatedly.

- The copyrights of the **Children** contents and issues related to them reserved by **UpToTen**.

❑ Wellness

This is benefi cial health management content (relaxing sound) that can be enjoyed by the whole family.

❑ Others

The default content is not saved in the TV memory.

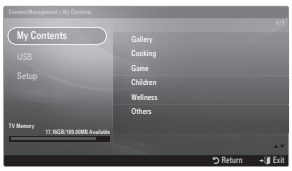
- You can copy new content to the TV memory using the **Content Management** screen.

Using the Content Management

❑ Content Management

You can add or delete contents using the **Content Management**.

- You can select multiple content items by selecting content items repeatedly and pressing the Yellow button.



My Contents

You can check the content saved in the TV memory for each subitem of the Content Library.

– Select a content item and press the **ENTER** ↵ button. You can play or delete the selected content item.

USB

You can check the content saved on the USB device for each subitem of the **Content Library**. Select a content item and press the **ENTER** ↵ button. You can play the selected content item or copy it to the TV memory.

- **Content Library** only supports USB Mass Storage Class devices (MSC). MSC is a Mass Storage Class Bulk-Only Transport device. Examples of MSC are Thumb drives and Flash Card Readers.
- Playing a game using an external USB memory device will allow you to save your game (depending on the game). Take care as removing the USB memory device while saving data to the USB memory device may cause the data to be lost.
- Downloading New Contents

  New content other than the built-in content will be provided via the Samsung.com website free of charge. When you download the paid contents, you need UDN number to download contents. Check the UDN number before downloading a new content item.

- Downloading Content
  1. Visit the www.samsung.com website.
  2. Select a content item in the Contents Download page.
  3. Download the contents onto the USB memory device.
  4. Go to **Content Library** main menu by pressing **CONTENT** button or choosing **Content Library** (Menu → **Application** → **Content Library**).
  5. Plug the USB memory into USB port on the side of the TV.
  6. You can see the content sub item which you downloaded.
  7. Select a content item and press the enter button.
  8. You can play the selected content item or copy it to the TV memory.

■ **Setup**

- **Screen Saver Run Time**: Select to set the waiting time before the screen saver appears.
- **Save UDN**: Saves the UDN number to a USB device.

✎ An NTFS format USB storage device does not support to save UDN. Recommended to use FAT format USB storage device.

INTERNET@TV

✎ This function may not be supported depending on your country.

✎ If you have some problems while using a widget service, please contact to service provider.
In the widget, press the green button and get contact information or refer to help website for service provider information.

✎ English may be only supported in widget service depending on region.

✎ Not available in all locations.

Getting Started with Internet@TV

Internet@TV provides SAMSUNG's widget services through a network connection. Internet@TV contents can be changed depending on contents provider. You can access various information such as YouTube, through the **Internet@TV** service.

✎ The configuration of Widgets and their provided services may differ according to the selected country. After changing country, turn off and on the TV. Then you can use widget service supported changed country. If Country is set to Others, TV can't recognize your country. In this case, please select directly from the service country list.

✎ If a certain content's font provided by contents provider is not supported on TV, It may not be viewed normally.

✎ For more information on how how to configure your country, refer to page 9.

✎ You may experience slow operation or hesitation when using this function due to network conditions.

✎ Before using **Internet@TV**, set up the network first. For more information on how to configure your network, refer to pages 24~29.

When running **Internet@TV** for the first time, the basic settings proceed automatically. It may take few minutes to update.

1. Press the **MENU** button. Press the ▲ or ▼ button to select **Application**, then press the **ENTER** ↵ button.
2. Press the ▲ or ▼ button to select **Internet@TV**, then press the **ENTER** ↵ button.
   ✎ Press the **Internet@** button on the remote control to display the **Internet@TV** menu.
3. The 'User Agreement' is displayed. Select **Agree** to accept the agreement.
4. The 'Statistics & Analysis' is displayed. Select **Agree** to accept the agreement.

Setting up Internet@TV

You can check and use the menus regarding **Single Sign On (SSO)**, system management and properties. Press the ▲ or ▼ button to select **Setup**, then press the **ENTER** ↵ button.

❑ Single Sign On

You can use this menu when creating, deleting the account.
Using the **Single Sign On**, you can control your account including contents site's account information.
You don't need additional log in.

✎ Account is only for internet@TV.

■ **Create Account**

You can create account and be linked with desired service site.

✎ Account will be made less than 10.

✎ Character of Account should be limited to 10.

✎ If there is no service that needs log in, you can not create account.

■ **Account Management**

- **Service Site**: You can register log in information of service site (such as YouTube).
- **Change Password**: Change the password of your account.
- **Delete**: Delete the account.

✎ If you forget the password of account, press the remote control buttons in the following sequence, which resets the **Internet@ TV**: **POWER** (off) → **MUTE** → **9** → **4** → **8** → **POWER** (on).
If you use this function, all accounts will be deleted.

❑ System Setup

✎ **Ticker Autorun, Ticker Duration** may not be supported depending on country.

■ **Change the Service Lock password**

✎ The default password number of a new TV set is 0-0-0-0.

✎ If you forget the password, press the remote control buttons in the following sequence, which resets the password to **0-0-0-0: POWER** (off) → **MUTE** → **8** → **2** → **4** → **POWER** (on).

■ **Service Duration**
Select to set the service duration time before the screen saver appears.

■ **Ticker Autorun → Off / On**
Select to set ticker to run automatically or not when turning on the TV.

■ **Ticker Duration**
Select to set the service duration time before the screen saver appears.

❑ Properties

Display information of Internet@TV.
You can measure the speed of your Internet TV service using **Measuring the speed of the Internet TV service**.

Using the Internet@TV service

In a widget that provides multiple category menus, you can view the contents of the category menus using the ◄ and ► buttons.

Account Login

1. Press the Red button.
2. Select desired **User account**, then press the **ENTER** ↵ button.
3. Input the password.
   ✎ When login succeeds, User account will be displayed on the screen.
   ✎ Before login, at least one and more account should be registered. If you want to create account, refer to page 56.

Using the Widget Gallery

You can use **Run Service, Lock, Install Service** at the existing widget and you can see description of the widget service that isn't installed.
On the **Internet@TV**, you can add and use various widgets provided by service provider. It may vary according to contents provider.

- **Run Service**: Runs the widget service.
- **Lock**: Set the service lock
- **Install Service** (or **Delete Service)**: Install or delete widget service.

Using the YouTube Widget

You can watch the movie provided by YouTube.
If you have the account in YouTube, Register account information using Account management. Then, you can use My Favourites category.

✎ The menu can be changed by web service.

✎ There may be inappropriate contents for child. In this case, use **Lock** function in **Widget Gallery**.

Troubleshooting for internet@TV

Problem	Possible Solution
Some widget services do not work.	Check with that service provider. In the widget, press the green button and get contact information or refer to help website for widget service provider information. Refer to Help website page.
What is the advantage of single sign on?	If you create account and register your login information of desired service, you can access personalized content without additional login.
When a network error occurred, I can't use other menus except setting menu.	If network connection doesn't work, your service might be limited. Because all of function except setting menu are needed to connect internet.
Is there any possibility to show adult movies on YouTube?	Basically, at the list on the menu it is filtered out. But by using search function, It can be shown. In this case, using the Widget Gallery lock the widget service.

Help Website

Country	Website
UAE	www.samsung.com → Consumer → television → medi@2.0 → Internet@TV
Australia	www.samsung.com → Consumer → television → medi@2.0 → Internet@TV
China	www.samsung.com → 个人消费产品 → 电视产品 → medi@2.0 → Internet@TV
India	www.samsung.com → consumer products → television → medi@2.0 → Internet@TV
Indonesia	www.samsung.com → Produk → television → medi@2.0 → Internet@TV
Japan	www.samsung.com → 製品情報 → 液晶ディスプレイ → medi@2.0 → Internet@TV
Malaysia	www.samsung.com → Consumer → television → medi@2.0 → Internet@TV
New Zealand	www.samsung.com → Consumer → television → medi@2.0 → Internet@TV
Philippines	www.samsung.com → Consumer → television → medi@2.0 → Internet@TV
Singapore	www.samsung.com → Consumer → television → medi@2.0 → Internet@TV
Taiwan	www.samsung.com → 個人消費產品 → 電視 → medi@2.0 → Internet@TV
Thailand	www.samsung.com → ผลิตภัณฑ์ → โทรทัศน์ → medi@2.0 → Internet@TV
Vietnam	www.samsung.com → sản phẩm nghe nhìn → máy thu hình → medi@2.0 → Internet@TV
South Africa	www.samsung.com → Consumer → television → medi@2.0 → Internet@TV

- Approaching step may be changed later on.
- It can be different links for special countries.

Home Network Centre

About the **Home Network Centre**

The **Home Network Centre** connects the TV and mobile phones through a network. You can view call arrivals, text message contents, and schedules set on the mobile phone on the TV using the **Home Network Centre**. In addition, you can play the media contents saved on the mobile phones such as videos, photos and music by controlling them onto the TV via the network.

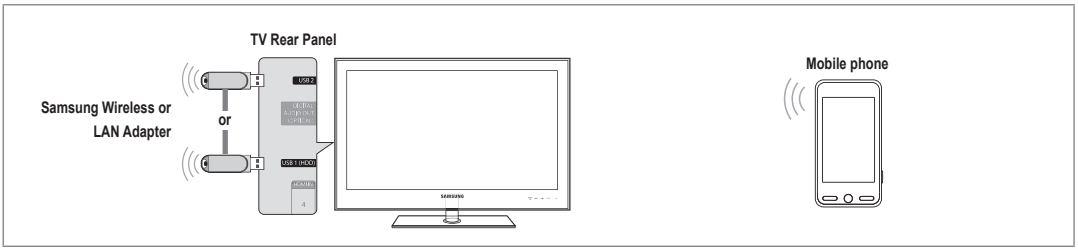
- If the device supports **DLNA DMC (Digital Media Controller)** function, Home Network Centre function is available.
- The Samsung **SCH-i900** mobile phone supports the Home Network Centre. Other models will be added in the future. The mobile device may need additional software installation. For details, refer to each user's guide.

Connecting to the Home Network Centre

For more information about the network settings, refer to pages 24~29.

- **Connecting through a Wi-Fi Ad-hoc network**

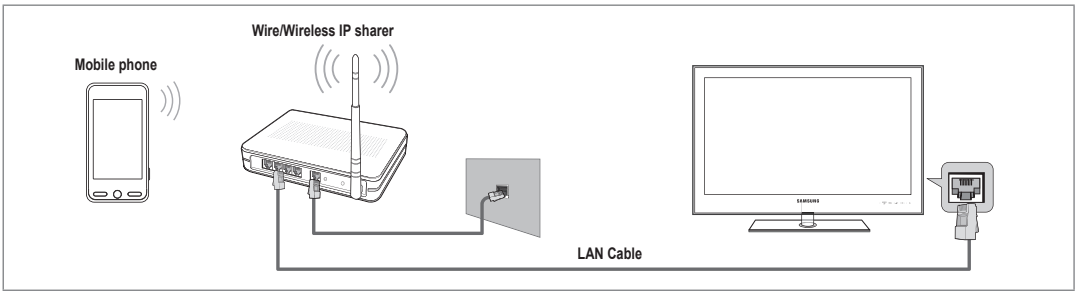
1. Connect the 'Samsung Wireless LAN Adapter' to the **USB1(HDD)** or **USB2** port of the TV.

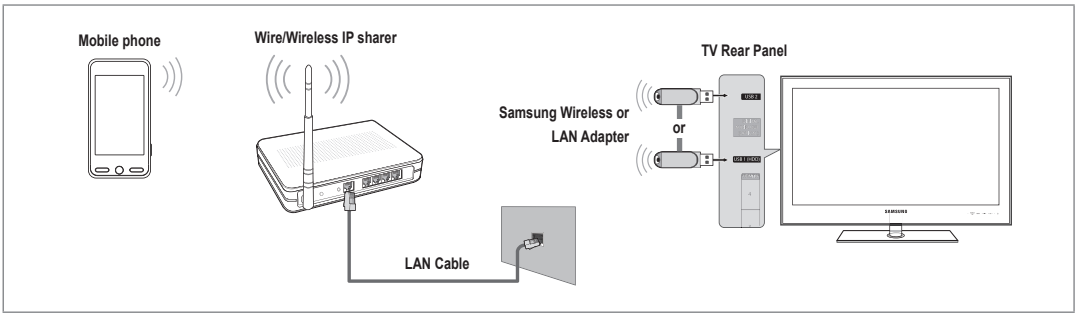


2. For more information on how to configure Ad-hoc network, refer to page 29.
   - For information on configuring the mobile phone's network settings, refer to the mobile phone manual.
3. Set up the IP address, SSID and password for the mobile phone in the Ad-hoc Settings of the mobile phone using the **Network Name (SSID)** and **Security Key** (password) displayed on the TV.

- **Connecting through a wire / wireless IP sharer**

1. Connect the LAN port of the TV and the Wire/Wireless IP sharer using the LAN cable or connect the **USB1(HDD)** or **USB2** port of the TV and the 'Samsung Wireless LAN Adapter'.
   - For the procedures to set up the wire/wireless sharer and the mobile phone, refer to the manual of the corresponding device.

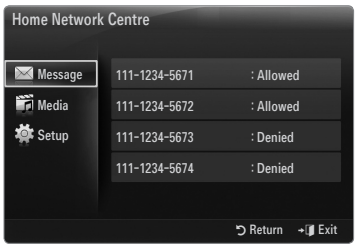




Setting Up the Home Network Centre

❑ Message

Shows a list of mobile phones which have been set up with this TV to use the message function (the call arrivals, text message contents and schedules set on the mobile phone).

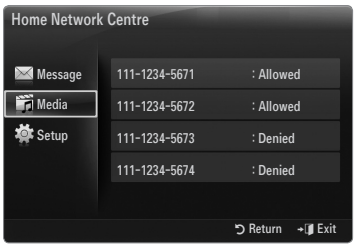


- **Allowed**
  Allows the mobile phone.
- **Denied**
  Blocks the mobile phone.
- **Delete**
  Deletes the mobile phone from the list.
  ✎ This function just deletes the name from the list. If the deleted mobile device turns on or tries to connect to the TV, it may be shown on the list.

❑ Media

Shows a list of mobile phones which is available to control media contents (videos, photos, music) from the phone.

✎ Besides mobile phone, other mobile devices that support **DLNA DMC** are available.



- **Allowed**
  Allows the mobile phone.
- **Denied**
  Blocks the mobile phone.
- **Delete**
  Deletes the mobile phone from the list.
  ✎ This function just deletes the corresponding name on the list. If the deleted mobile device turns on or tries to connect to the TV, it may be shown on the list.

❑ Setup

- **Message → On / Off**
  You can determine whether to use the message function (the call arrivals, text message contents, and schedules set on the mobile phone).
- **Media → On / Off**
  You can select whether to use the Media function that plays the contents (videos, photos, music) from the mobile phone.
- **TV name**
  You can set the TV name so as to find it easily on the mobile device.
  ✎ If you selects **User Input**, you can type the TV name by **OSK(On Screen Keyboard)**.

Using the Message Function

Using this function, you can view the call arrivals, text message contents and schedules set on the mobile phone through the alarm window while watching TV.

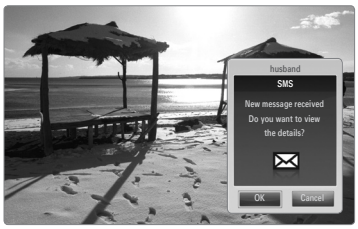
- To disable this **Message** alarm window, set **Message** to **Off** in **Setup** of the **Home Network Centre**.
- The alarm window appears for 20 seconds. If no key is pressed or if **Cancel** is selected, it appears up to three times at 5 minute intervals.
- If OK is selected, or if OK is not selected while the message is displayed three times, the message will be deleted. The message is not deleted from the mobile phone.
- The simple alarm window can be displayed, while using some applications such as Media Play, Contents Library, etc. In this case, to view the contents of the message, switch to TV viewing mode.
- When the message of an unknown mobile phone is displayed, select the mobile phone in the **Message** item of the **Home Network Centre** and select **Denied** to block the phone.

Message View

If a new text message (SMS) arrives while you are watching TV, the alarm window appears. If you click the **OK** button, the contents of the message are displayed.

- If you select the **OK** button, the contents of the message are displayed.
- If you select the **Cancel** button, the alarm window appears up to three times at 5 minute intervals.

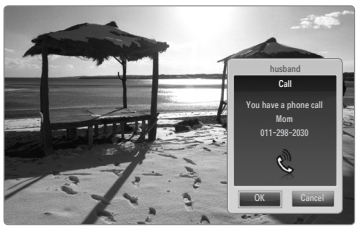
- You can configure the viewing settings for the text message (SMS) contents on the mobile phone. For the procedures, refer to the mobile phone manual.
- Some special characters may be displayed as blank or broken characters.



Call Arrival Alarm

If a call arrives while you are watching TV, the alarm window appears.

- If you select the **OK** button, the call arrival alarm is confirmed and the alarm window is closed.
- If you select the **Cancel** button, the alarm window appears up to three times at 5 minute intervals.

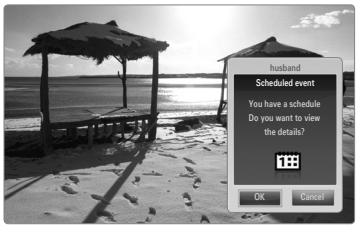


Schedule Alarm

While you are watching TV, the alarm window appears to display the registered schedule.

- If you select the **OK** button, you can view the contents of the schedule registered on the mobile phone.
- If you select the **Cancel** button, the alarm window appears up to three times at 5 minute intervals.

- You can configure the viewing settings for the schedule contents on the mobile phone. For the procedures, refer to the mobile phone manual.
- Some special characters may be displayed as blank or broken characters.



Using the Media Function

An alarm window appears informing the user that the media contents (videos, photos, music) sent from the mobile phone will be displayed on the TV.

The contents are played automatically 3 seconds after the alarm window appears.

If you press the **RETURN** or **EXIT** button when the alarm window appears, the **Media Contents** are not played.

- To turn off the media contents transmission from the mobile phone, set **Media** to **Off** in **Setup** of the **Home Network Centre**.
- The contents may not be played on the TV depending on their resolution and format.

Media play control buttons

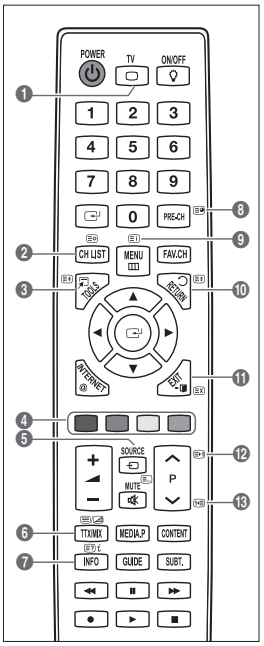
Button	Operations
◄/►	Move the cursor and select an item. While playing a movie file: skip forwards or backwards through the movie file.
ENTER ↵	Pressing the **ENTER** ↵ button during play pauses the play. Pressing the **ENTER** ↵ button during pause resumes the play.
RETURN	Return to the previous menu.
TOOLS	Run various functions from the Photo, Music and Movie menus.
INFO	Show file information.
EXIT	Stop **Media Play** mode and Returns to TV mode.

- The **ENTER** ↵ and ◄/► buttons may not work depending on the type of media content.
- Using the mobile device, you can control playing media. For details, refer to each user's guide.

Teletext Feature

Most television stations provide written information services via Teletext. The index page of the teletext service gives you information on how to use the service. In addition, you can select various options to suit your requirements by using the remote control buttons.

- For teletext information to be displayed correctly, channel reception must be stable. Otherwise, information may be missing or some pages may not be displayed.
- You can change teletext pages by pressing the numeric buttons on the remote control.



❶ (exit): Exit from the Teletext display.

❷ (store): Used to store the Teletext pages.

❸ (size): Press to display the double-size letters in the upper half of the screen. For lower half of the screen, press it again. To display normal screen, press it once again.

❹ Colour buttons (red/green/yellow/blue): If the FASTEXT system is used by a broadcasting company, the different topics covered on a Teletext page are colour-coded and can be selected by pressing the coloured buttons. Press one of them corresponding to the required. The page is displayed with other coloured information that can be selected in the same way. To display the previous or next page, press the corresponding coloured button.

❺ (mode): Press to select the Teletext mode (LIST/ FLOF). If you press it in the LIST mode, it switches into the List save mode. In the List save mode, you can save Teletext page into list using the (store) button.

❻ / (Teletext on/mix): Press to activate Teletext mode after selecting the channel providing the Teletext service. Press it twice to overlap the Teletext with the current broadcasting screen.

❼ (reveal): Used to display the hidden text (answers to quiz games, for example). To display normal screen, press it again.

❽ (sub-page): Used to display the available sub-page.

❾ (index): Used to display the index (contents) page at any time while you are viewing Teletext.

❿ (hold): Used to hold the display on a given page if the selected page is linked with several secondary pages which follow on automatically. To resume, press it again.

⓫ (cancel): Used to display the broadcast when searching for a page.

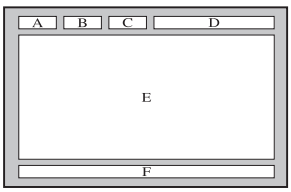
⓬ (page up): Used to display the next Teletext page.

⓭ (page down): Used to display the previous Teletext page.

- You can change Teletext pages by pressing the numeric buttons on the remote control.

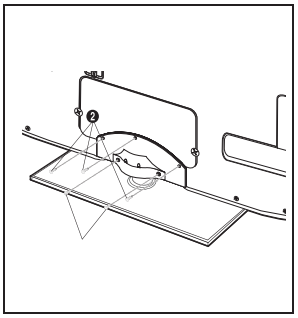
The Teletext pages are organized according to six categories:

Part	Contents
A	Selected page number.
B	Broadcasting channel identity.
C	Current page number or search indications.
D	Date and time.
E	Text.
F	Status information.
	FASTEXT information.



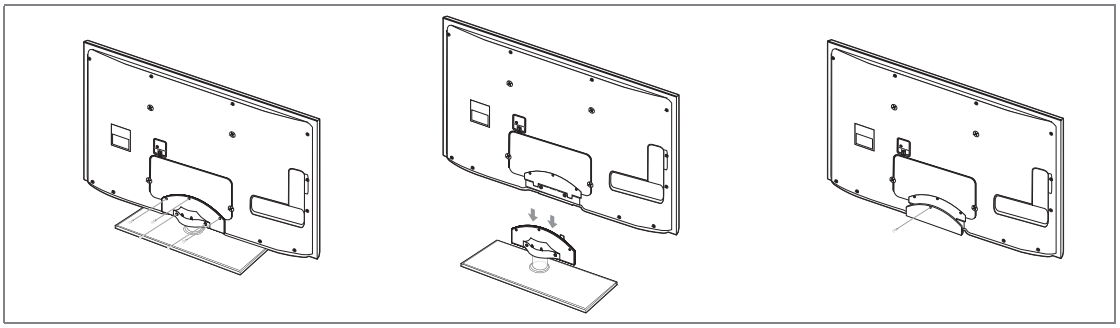
- Teletext information is often divided between several pages displayed in sequence, which can be accessed by:
  Entering the page number
  Selecting a title in a list
  Selecting a coloured heading (FASTEXT system)
- Teletext level supported by the TV is version 2.5 which is capable of displaying additional graphics or text.
- Depending upon the transmission, blank side panels can occur when displaying Teletext.
- In these cases, additional graphics or text is not transmitted.
- Older TV's which do not support version 2.5 are not capable of displaying any additional graphics or text, regardless of the Teletext transmission.
- Press the **TV** button to exit from the Teletext display.

Installing the Stand



1. Attach your LED TV to the stand.
   - Two or more people should carry the TV.
   - Make sure to distinguish between the front and back of the stand when assembling them.
   - To make sure the TV is installed on the stand at a proper level, do not apply excess downward pressure to the upper left of right sides of the TV.
2. Fasten two screws at position ❶ and then fasten two screw at position ❷.
   - Stand the product up and fasten the screws. If you fasten the screws with the LED TV placed down, it may lean to one side.
   - The stand is installed for models with the screen size of 37 inch and above.

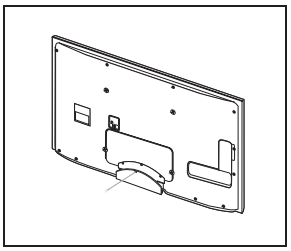
Disconnecting the Stand



1. Remove four screws from the back of the TV.
2. Separate the stand from the TV.
   - Two or more people should carry the TV.
3. Cover the bottom hole with the cover.

Installing the Wall Mount Kit

Wall mount items (sold separately) allow you to mount the TV on the wall.
For detailed information on installing the wall mount, see the instructions provided with the Wall Mount items. Contact a technician for assistance when installing the wall mounted bracket.
Samsung Electronics is not responsible for any damage to the product or injury to yourself or others if you elect to install the TV on your own.



⚠ Do not install your Wall Mount Kit while your TV is turned on. It may result in personal injury due to electric shock.

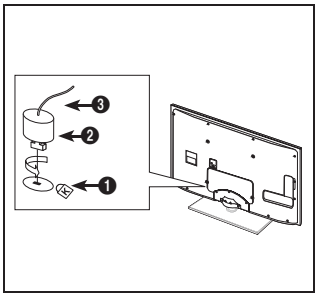
Anti-Theft Kensington Lock

The Kensington Lock is a device used to physically fix the system when using it in a public place. The appearance and locking method may differ from the illustration depending on the manufacturer.

Refer to the manual provided with the Kensington Lock for proper use.

- The locking device has to be purchased separately.
- The location of the Kensington Lock may be different depending on its model.

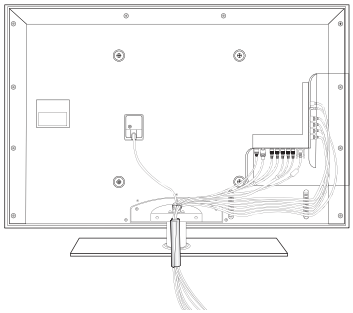
1. Insert the locking device into the Kensington slot on the LED TV ❶ and turn it in the locking direction ❷.
2. Connect the Kensington Lock cable ❸.
3. Fix the Kensington Lock to a desk or a heavy stationary object.

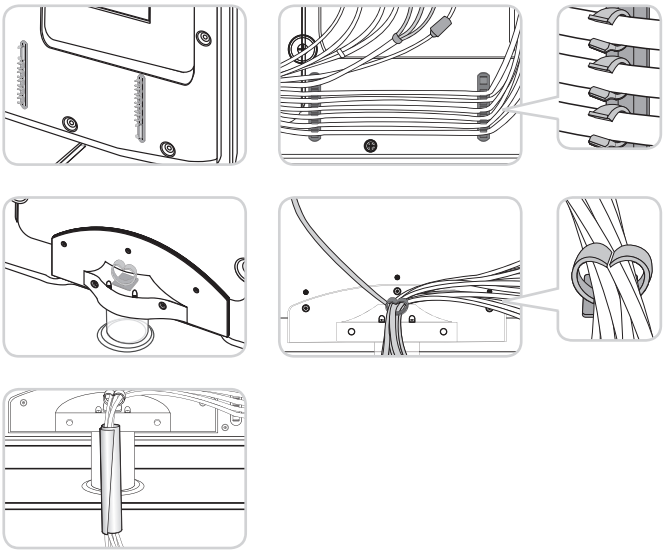


Assembling the Cables

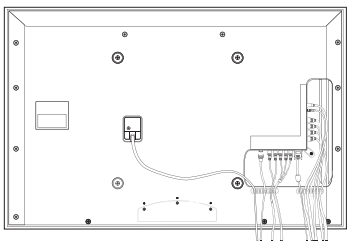
❑ Stand Type

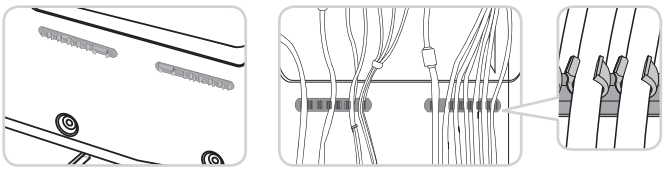
- Enclose the cables in the Holder-Wire Cable so that the cables are not visible through the transparent stand.





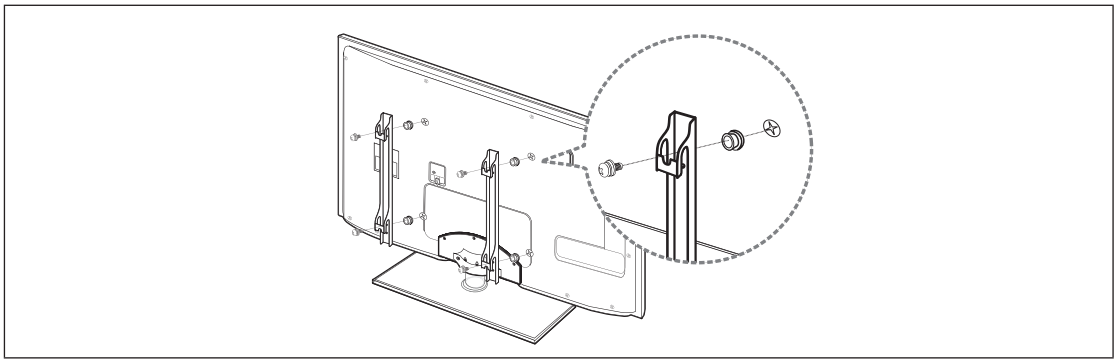
❑ Wall-Mount Type





Preparing before installing Wall-Mount

To install a wall-mount from another manufacturer, use the Holder-Ring ❶.

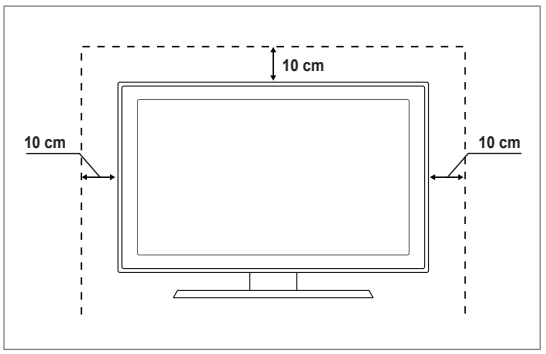


Securing the Installation Space

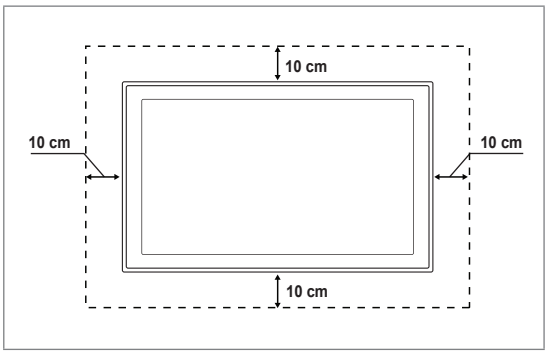
Keep the required distances between the product and other objects (e.g. walls) to ensure proper ventilation.
Failing to do so may result in fire or a problem with the product due to an increase in the internal temperature of the product.
Install the product so the required distances shown in the figure are kept.

- When using a stand or wall-mount, use parts provided by Samsung Electronics only.
  - If you use parts provided by another manufacturer, it may result in a problem with the product or an injury due to the product falling.
  - If you use parts provided by another manufacturer, it may result in a problem with the product or fire due to an increase in the internal temperature of the product due to poor ventilation.
- The appearance may differ depending on the product.

When installing the product with a stand



When installing the product with a wall-mount

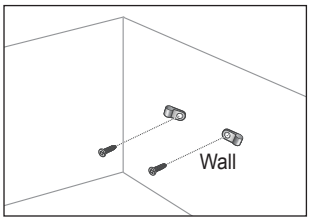


Securing the TV to the Wall

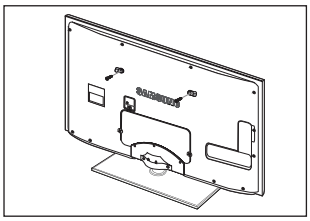
Caution: Pulling, pushing, or climbing on the TV may cause the TV to fall. In particular, ensure your children do not hang over or destabilize the TV; doing so may cause the TV to tip over, causing serious injuries or death. Follow all safety precautions provided on the included Safety Flyer. For added stability, install the anti-fall device for safety purposes, as follows.

To secure the TV:

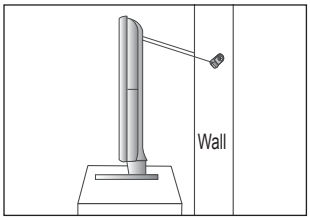
1. Put the screws into the clamps and firmly fasten them onto the wall. Confirm that the screws have been firmly installed onto the wall.
   - You may need additional material such as an anchor depending on the type of wall.
   - Since the necessary clamps, screws, and string are not supplied, please purchase them separately.



2. Remove the screws from the centre back of the TV, put the screws into the clamps, and then fasten the screws onto the TV again.
   - Screws may not be supplied with the product. In this case, please purchase the screws of the following specifications.
   - Screw Specifications
     For a 32 ~ 40 Inch: M6 X 15



3. Connect the clamps fixed onto the TV and the clamps fixed onto the wall with a strong cable.
   - Install the TV near to the wall so that it does not fall backwards.
   - It is safe to connect the string so that the clamps fixed on the wall are equal to or lower than the clamps fixed on the TV.
   - Remove the cable before moving the TV.
4. Verify all connections are properly secured. Periodically check connections for any sign of fatigue for failure. If you have any doubt about the security of your connections, contact a professional installer.



Troubleshooting: Before Contacting Service Personnel

Problem	Possible Solution
No sound or picture	Check that the mains lead has been connected to a wall socket. Check that you have pressed the button on your set. Check the picture contrast and brightness settings. Check the volume.
Normal picture but no sound	Check the volume. Check whether the **MUTE** button has been pressed on the remote control. Check the **Speaker Select** settings.
Screen is black and power indicator light blinks steadily	On your computer check; Power, Signal Cable. The TV is using its power management system. Move the computer's mouse or press any key on the keyboard.
No picture or black and white picture	Adjust the colour settings. Check that the broadcast system selected is correct.
Sound and picture interference	Try to identify the electrical appliance that is affecting the set and move it further away. Plug your set into a different mains socket.
Blurred or snowy picture, distorted sound	Check the direction, location and connections of your aerial. This interference is often due to the use of an indoor aerial.
Remote control malfunctions	Replace the remote control batteries. Clean the upper edge of the remote control (transmission window). Check the battery terminals.
'Check signal cable.' message is displayed	Check that the signal cable is firmly connected to the PC or video sources. Check that the PC or video sources are turned on.
On PC mode, 'Not Supported Mode.' message is displayed	Check the maximum resolution and the frequency of the video adaptor. Compare these values with the data in the Display Modes.
The damaged picture appears in the corner of the screen	If **Screen Fit** is selected in some external devices, the damaged picture may appear in the corner of the screen. This symptom is caused by external devices, not TV.
The 'Resets all settings to the default values.' message appears.	This appears when you press and hold the **EXIT** button for a while. The product settings are reset to the factory defaults.
You may see small particles if you look closely at the edge of the bezel surrounding the TV screen.	This is part of the product's design and is not a defect.

The TFT LED panel uses a panel consisting of sub pixels (6 220 800) which require sophisticated technology to produce. However, there may be few bright or dark pixels on the screen. These pixels will have no impact on the performance of the product.

Specifications

Model Name	UA40B7000	UA46B7000
Screen Size (Diagonal)	40 inch	46 inch
PC Resolution (Optimum)	1920 X 1080 @ 60 Hz	1920 X 1080 @ 60 Hz
Sound Output	10W x 2	10W x 2
Dimension (WxDxH) Without Stand With stand	983 X 30 X 631 mm 983 X 255 X 688 mm	1115 X 30 X 705 mm 1115 X 275 X 763 mm
Weight With Stand	18 kg	23 kg
Environmental Considerations Operating Temperature Operating Humidity Storage Temperature Storage Humidity	10°C to 40°C (50°F to 104°F) 10% to 80%, non-condensing -20°C to 45°C (-4°F to 113°F) 5% to 95%, non-condensing	
Stand Swivel (Left / Right)	-20˚ ~ 20˚	

Model Name	UA55B7000
Screen Size (Diagonal)	55 inch
PC Resolution (Optimum)	1920 X 1080 @ 60 Hz
Sound Output	15W x 2
Dimension (WxDxH) Without Stand With stand	132 1 X 30 X 815 mm 132 1 X 305 X 877 mm
Weight With Stand	28 kg
Environmental Considerations Operating Temperature Operating Humidity Storage Temperature Storage Humidity	10°C to 40°C (50°F to 104°F) 10% to 80%, non-condensing -20°C to 45°C (-4°F to 113°F) 5% to 95%, non-condensing
Stand Swivel (Left / Right)	-20˚ ~ 20˚

- Design and specifications are subject to change without prior notice.
- This device is a Class B digital apparatus.
- For the power supply and Power Consumption, refer to the label attached to the product.

- This product uses parts of the software from the Independent JPEG Group.
- This product uses parts of the software owned by the Freetype Project (www.freetype.org).
- This product uses some software programs which are distributed under the GPL/LGPL license. Accordingly, the following GPL and LGPL software source codes that have been used in this product can be provided after asking to vdswmanager@samsung.com.

  GPL software: Linux Kernel, Busybox, Binutils

  LGPL software: Glibc, ffmpeg, smpeg, libgphoto, libusb, SDL

GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To “convey” a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays “Appropriate Legal Notices” to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The “source code” for a work means the preferred form of the work for making modifications to it. “Object code” means any non-source

form of a work.

A “Standard Interface” means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The “System Libraries” of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A “Major Component”, in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The “Corresponding Source” for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work’s System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law. You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users’ Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work’s users, your or third parties’ legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program’s source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to “keep intact all notices”.

– c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
– d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an “aggregate” if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation’s users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

– a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.
– b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.
– c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.
– d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.
– e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d. A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A “User Product” is either (1) a “consumer product”, which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, “normally used” refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

“Installation Information” for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

“Additional permissions” are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered “further restrictions” within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An “entity transaction” is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party’s predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A “contributor” is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor’s “contributor version”.

A contributor’s “essential patent claims” are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, “control” includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the “copyright” line and a pointer to where the full notice is found.

<one line to give the program’s name and a brief idea of what it does.> Copyright (C) <year> <name of author>

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

<program> Copyright (C) <year> <name of author> This program comes with ABSOLUTELY NO WARRANTY; for details type `show w’. This is free software, and you are welcome to redistribute it under certain conditions; type `show c’ for details.

The hypothetical commands `show w’ and `show c’ should show the appropriate parts of the General Public License. Of course, your program’s commands might be different; for a GUI interface, you would use an “about box”.

You should also get your employer (if you work as a programmer) or school, if any, to sign a “copyright disclaimer” for the program, if necessary.

For more information on this, and how to apply and follow the GNU GPL, see <http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <http://www.gnu.org/philosophy/why-not-lgpl.html>.

GNU Lesser General Public License (LGPL)

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

   The “source code” for a work means the preferred form of the work for making modifications to it. “Object code” means any non-source

   form of a work.

   A “Standard Interface” means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

   The “System Libraries” of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A “Major Component”, in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

   The “Corresponding Source” for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work’s System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

   The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

   The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

   All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law. You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

   Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users’ Legal Rights From Anti-Circumvention Law.

   No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

   When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work’s users, your or third parties’ legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

   You may convey verbatim copies of the Program’s source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

   You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

   You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

   - a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
   - b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to “keep intact all notices”.
   - c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
   - d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an “aggregate” if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation’s users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

- a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.
- b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.
- c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.
- d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.
- e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d. A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A “User Product” is either (1) a “consumer product”, which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, “normally used” refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

“Installation Information” for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

“Additional permissions” are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. “Knowingly relying” means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient’s use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is “discriminatory” if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others’ Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License “or any later version” applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy’s public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM “AS IS” WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the “copyright” line and a pointer to where the full notice is found.

> <one line to give the program’s name and a brief idea of what it does.> Copyright (C) <year> <name of author>
>
> This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.
>
> This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.
>
> You should have received a copy of the GNU General Public License along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

> <program> Copyright (C) <year> <name of author> This program comes with ABSOLUTELY NO WARRANTY; for details type `show w’. This is free software, and you are welcome to redistribute it under certain conditions; type `show c’ for details.

The hypothetical commands `show w’ and `show c’ should show the appropriate parts of the General Public License. Of course, your program’s commands might be different; for a GUI interface, you would use an “about box”.

You should also get your employer (if you work as a programmer) or school, if any, to sign a “copyright disclaimer” for the program, if necessary.

For more information on this, and how to apply and follow the GNU GPL, see <http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <http://www.gnu.org/philosophy/why-not-lgpl.html>.

LICENSE ISSUES

The OpenSSL toolkit stays under a dual license, i.e. both the conditions of the OpenSSL License and the original SSLeay license apply to the toolkit. See below for the actual license texts. Actually both licenses are BSD-style Open Source licenses. In case of any license issues related to OpenSSL please contact openssl-core@openssl.org.

OpenSSL License

Copyright (c) 1998-2007 The OpenSSL Project. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software must display the following acknowledgment: “This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (http://www.openssl.org/)”
4. The names “OpenSSL Toolkit” and “OpenSSL Project” must not be used to endorse or promote products derived from this software without prior written permission. For written permission, please contact openssl-core@openssl.org.
5. Products derived from this software may not be called “OpenSSL nor may “OpenSSL” appear in their names without prior written permission of the OpenSSL Project.
6. Redistributions of any form whatsoever must retain the following acknowledgment: “This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (http://www.openssl.org/)”

THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT ``AS IS'' AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OpenSSL PROJECT OR ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This product includes cryptographic software written by Eric Young (eay@cryptsoft.com). This product includes software written by Tim Hudson (tjh@cryptsoft.com).

Original SSLeay License

Copyright (C) 1995-1998 Eric Young (eay@cryptsoft.com) All rights reserved.

This package is an SSL implementation written by Eric Young (eay@cryptsoft.com). The implementation was written so as to conform with Netscapes SSL.

This library is free for commercial and non-commercial use as long as the following conditions are aheared to. The following conditions apply to all code found in this distribution, be it the RC4, RSA, lhash, DES, etc., code; not just the SSL code. The SSL documentation included with this distribution is covered by the same copyright terms except that the holder is Tim Hudson (tjh@cryptsoft.com).

Copyright remains Eric Young’s, and as such any Copyright notices in the code are not to be removed. If this package is used in a product, Eric Young should be given attribution as the author of the parts of the library used. This can be in the form of a textual message at program startup or in documentation (online or textual) provided with the package.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software must display the following acknowledgement: “This product includes cryptographic software written by Eric Young (eay@cryptsoft.com)” The word ‘cryptographic’ can be left out if the rouines from the library being used are not cryptographic related :-).
4. If you include any Windows specific code (or a derivative thereof) from the apps directory (application code) you must include an acknowledgement: “This product includes software written by Tim Hudson (tjh@cryptsoft.com)”

THIS SOFTWARE IS PROVIDED BY ERIC YOUNG ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The licence and distribution terms for any publically available version or derivative of this code cannot be changed. i.e. this code cannot simply be copied and put under another distribution licence [including the GNU Public Licence.]

This page is intentionally left blank.